THE FIFTY-SEVENTH YEAR.

Companion to the Almanac;

OR,

YEAR-BOOK

OF

GENERAL INFORMATION

FOR

1884.

PART I.

METEOROLOGY, FISH-CULTURE, LONGEVITY, MIGRATION OF BIRDS, SOCIAL SCIENCE, FOOD SUPPLY, PUBLIC HEALTH AND SANITATION, MUSICAL FESTIVALS.

PART II.

ARCHITECTURE AND PUBLIC IMPROVEMENTS, ART EXHIBITIONS, PROVINCIAL CONGRESSES, SCIENCE, MUSIC, PHILANTHROPY, LEGISLATION, STATISTICS, CHRONICLE AND NECROLOGY OF 1882-83.

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CONTENTS.

PART I.

METEOROLOGY, FISH-CULTURE, LONGEVITY, MIGRATION OF BIRDS, SOCIAL SCIENCE, PUBLIC HEALTH AND SANITATION, FOOD SUPPLY, MUSICAL FESTIVALS.

	Page
The Kew Observatory. By C. S. MURRAY	5
The Great International Fisheries Exhibition. By J. J. MANLEY, M.A.	23
Facts and Fancies of Longevity. By W. E. A. AXON, F.S.S.	39
The Migration of Birds. By W. E. A. AXON, F.S.S.	51
Thrift. By J. J. MANLEY, M.A.	65
The Channel Tunnel. By JOHN DENNIS	74
Smoke Abatement. By L. T. THORNE, Ph.D.	87
The Importation of Food. By EVELYN FREETH	101
Handel Festivals. By CHARLES MACKESON	107
The Dwellings of the Poor. By CHARLES MACKESON	117

PART II.

ARCHITECTURE AND PUBLIC IMPROVEMENTS, ART EXHIBITIONS, PROVINCIAL CONGRESSES, SCIENCE, MUSIC, PHILANTHROPY, LEGISLATION, STATISTICS, CHRONICLE AND NECROLOGY OF 1882–83.

Science of the Year 1882–83. By J. F. ISELIN, M.A., and C. A. BUCKMASTER, M.A.	146
Architecture of the Year 1882–83	131
Astronomy	146
Geography	151
Biology and Palæontology	158
Physics	161
Chemistry	163
The Art Exhibitions of the Year	165
The Provincial Congresses of the Year. By W. DAVENPORT ADAMS	182
The Music of the Year 1883	196
English Philanthropy in 1883	206
Table of the Public General Acts passed in the 3rd Session of 22nd Parliament of Queen Victoria, 1883	210

Page

Abstracts of Important Acts of Parliament, passed in 1883:—
1. Church, Education, and Professions:
City of London Parochial Charities 219
General Council of Medical Education and Registration 219
2. Army and Navy:
Grant to Lord Alcester 220
Grant to Lord Wolseley 220
Application of Greenwich Hospital Funds . . 220
3. Trade and Commerce:
Registration of Members of Companies Living in British Colonies 221
Payments to Servants of Wound-up Companies . 222
Cheap Railway Fares 223
Non-Payment of Wages in Public Houses . . 224
4. Local Government:
Poor Law Conferences 224
Prevention of Diseases in the Metropolis . . . 225
5. Law and Justice:
Supreme Court of Judicature Funds . . . 225
Corrupt Practices at Elections 226
Bankruptcy Act 228
Sale of Counterfeit Medals 233
Suspension of Elections 234
Provident Nominations and Small Intestacies . . 234
6. Finance:
National Debt 236
7. Miscellaneous:
White Lead Factories 237
Sea Fisheries 239
Agricultural Holdings 241

Abstracts of Parliamentary and other Official Documents:
1. Finance, Taxation, and Currency 245
2. General Commerce and Navigation 254
3. Trade and Agriculture 258
4. Population, Public Employment, and Vital Statistics 261
5. Crime, Pauperism, and Accidents 262
6. Education, Science, and Art 265
7. Emigration 270
8. The Post Office 272
9. Miscellaneous 275

Chronicle of Events and Occurrences 1882–83 277
Necrological Table 1882–83 283
INDEX 289

COMPANION TO THE ALMANAC

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PART I.

METEOROLOGY, FISH-CULTURE, LONGEVITY, MIGRATION OF BIRDS, SOCIAL SCIENCE, FOOD SUPPLY, PUBLIC HEALTH AND SANITATION, MUSICAL FESTIVALS.

THE KEW OBSERVATORY.

We who live in the outside world of busy life to whom that all-important subject, the weather, and its causes, changes, and effects, are of hourly moment, have no conception and can have no conception of the wondrous ingenuity and contrivances that abound for the practical demonstration of the science of meteorology. But let the reader pass through the portals of the Kew Observatory; there, amid the almost supernatural silence of that treasure-house of weather-lore, he will stand amazed at the systematically arranged collection of instruments of mercury, metal, and machinery—yes, machinery—that surrounds him. And all, all to make him weather-wise! The mariner sailing over the globe, the traveller surveying the regions of the unexplored, the pleasure-seeker in his luxurious yacht—

> "She walks the waters like a thing of life,
> And seems to dare the elements to strife,"—

the farmer in his fields, the miner in the bowels of the earth, and the wayfarer upon its surface—*cum multis aliis*—place their unwavering faith upon the monitors that issue from departments equipped with such material.

The Kew Observatory was built about the year 1768, to the order of King George III, by Sir William Chambers, for the

purpose of studying astronomical science, with special reference to the transit of Venus in 1769. The situation is low, but otherwise well suited for both its original and its present work. It stands in the Old Deer Park, Richmond, some little distance above Kew Gardens, near that part of the bend of the River Thames upon the southern bank which faces Isleworth, being a little more than 900 feet from the water side. Contrary to popular belief, the eastern side of this park abuts upon the main street of Richmond itself and the Kew Road, whilst Richmond Green is in the south-eastern corner. To show how characteristically isolated this building is from the ways of the world, the only open entrance to it is through a farmyard, and along an ankle-spraining "prairie path" of cinder-slag, whose width does not reach the plural of feet, but only so many inches. The park is the property of the Crown, and the stewards of the Crown have well doubled the saying of "no royal road to learning" by maintaining that there shall be no royal road to Kew and its science. True, we can walk on the velvety grass when "baro" and "thermo" rule high; but, when the pluvial powers are omnipotent—which is a long omnipotence in that part of our earth-planet—sea-boots and the slag-boulder pavement are at a premium.

Let us here mention a "notion" lest we should forget it, it is this: Nearly all persons with whom we have held converse upon the subject have lived under the delusion that some heaven-ascending pagoda-like architecture of the famous gardens was our Mecca, and have gasped the gasp of the horror-stricken when told that the lone, lone "shanty," away on the lone, lone prairie near the winding water, was the veritable home of the Clerk of the Weather! There, amidst his "ometers," and "mometers," and "graphs," and "scales," and "gauges," and all the other mystic agents of his necromancy that obey his will—and their name is legion—this superhuman entity conjures unseen, and tells a wondering world how sun, and moon, and cloud, and rain, and thunder, and lightning, even the ever-present unfelt magnetism of the globe itself report their advent and their action, their coming and their going to him. Nay more, they leave a record of the duty of the day and night behind them, what they have done and how they have done it! Surely, then, such work and workers are worthy of a noble lodgment, nobler far than that they have: and, hoping that such a possession may soon be theirs, we now proceed upon our way,

"THE ROYAL SOCIETY OF LONDON FOR IMPROVING NATURAL KNOWLEDGE" came into existence in 1660, and was incorporated by Royal Charter in 1662. After passing through various phases it reached the Presidency of Sir Isaac Newton in 1703, and he guided its destinies until his death in 1727. This now celebrated Society is said to be the oldest of its kind in Europe, with the exception of one that exists at Rome. It has had for Presidents such men as Sir Joseph Banks, Sir Humphrey Davy, Mr. Davies, Mr. Gilbert, the late Marquis of Northampton, and the late Duke of Sussex. One of the most cherished honours of the learned is that of being authorised to write F.R.S. after the individual's name; in addition to which honour the coveted letters form the "Open Sesame" to every intellectual Association throughout the civilised world.

For many years Kew may be said to have quietly glided into a long winter of hybernation, being under the careful guardianship of a curator and reader. However, in 1841, the Government of Sir Robert Peel "disestablished" it, and bestowed such instruments as it had among other learned bodies. Following upon that, after refusal of the building by the Society—as a Society—through inadequacy of funds, a number of the Fellows, in unison with the British Association, and sanctioned by the Government, set about to establish a Physical Observatory by means of subscriptions among scientific men.

The late Marquis of Northampton, as President of the British Association, and Lord Francis Egerton, as President of the Royal Society, leading the movement, it was decided that meteorology, electricity, and magnetism were to be the departments of science for investigation at Kew, and means were immediately taken in that direction. But the new venture was not yet quite clear of rocks and shoals; for the General Committee of the British Association passed a threatening resolution at the Cambridge meeting of 1845, namely, "That it be referred to the Council to take into consideration before the next meeting of the Association, the expediency of discontinuing the Kew Observatory." A committee consisting of the late Astronomer-Royal, Sir J. F. W. Herschel, Colonel Sabine, and Professors Graham and Wheatstone, was called into action to make inquiries and to report upon the value of the scientific work which Kew had up to that time performed. Their unanimous opinion was strongly in favour of the maintenance of the Observatory in the work that it was doing, and accordingly, on it went in

the even tenor of its way for several years. In 1851 Mr. Ronalds, the superintendent, retired, and was succeeded by Mr. Welsh, who had been his assistant. The last-named gentleman died in 1859, and Mr. Balfour Stewart became the head. It may be mentioned here that the Board of Trade accepted the assistance of the Observatory with respect to meteorological work in 1855.

When, on the death of Admiral Fitzroy, the meteorological department of the Board of Trade was transferred to the charge of a committee nominated by the Royal Society, Kew was made a central station from which outlying Observatories at Aberdeen, Armagh, Falmouth, Glasgow, Stonyhurst, and Valentia were controlled, its superintendent being their examiner and reporter. A grant from the fund placed at the disposal of the Committee, which is now the Meteorological Council, is the only sum of public money contributed to its support.

In 1871 the British Association's annual grant was withdrawn, and a sum of 10,000*l.* being placed in trust in the hands of the Royal Society by Mr. Gassiot for the maintenance of its magnetic observations, it passed into the charge of a committee selected by that body, who appointed Mr. Samuel Jeffery its superintendent.

Having now put the reader in possession of some of the leading incidents in the history of Kew, its hazards and struggles, until it finally became an independent scientific factor in the well-being of mankind, we will state the nature of the materials that it works upon, the instruments it uses, and the way in which that work in its multifarious details is carried out. To begin at the beginning.

This earth which we inhabit has, as is now well understood, two principal motions in space. One is on its axis like the spinning of a top, whilst the other is in its orbit, or annual path round the sun. The circumference of the earth round the equator is, in full numbers, 24,000 miles, whilst its path round its luminary has been stated at 578,000,000 of miles. Of course the 24,000 miles we may understand, but the hundreds of millions are utterly beyond our comprehension. There is surrounding the earth a body of air, or atmosphere, which has been variously estimated to be from forty to eighty miles high. This atmosphere has physical properties specially peculiar to itself, such as weight, motion, temperature, elasticity, &c., and it is with these properties that meteorology has to deal.

We have said that the earth has a double movement in

space; namely, an axial one, and orbital one, and in both these movements it carries its atmosphere along with it. In addition to these it is subject to both solar and lunar influences, which are only mentioned here for the purpose of noting that such influences exist, as the full details of their action and effects would, scientifically, be somewhat beyond the scope of a popular paper. It will thus be readily understood that the atmosphere, with its whirling motion round the globe, and its onward motion in the path of that globe's progress, is bound by the nature of things to have disturbances of one kind and another, in fact, air storms, no matter under what name any particular form of such disturbances may be classed. Now, the principal property of the air is weight; the nearer it is to the surface of the earth the heavier it is, and the farther away from the earth the lighter it is, as has been proved by the ascent of mountains, and the still higher testing by balloon observations. Indeed, instruments have been constructed and tables have been computed at Kew to enable the mountain climber, provided with them, to determine how many feet he is, from time to time, above the level of the sea; or above the earth altogether, if he is in a balloon; such instruments being acted upon by the weight and temperature of the atmosphere. As he ascends the air gradually becomes more and more attenuated, until it has been said that, practically, there is no sensible atmosphere at the height of eighty miles, whilst half of its weight lies absolutely within three and a-half miles of the sea-level. Furthermore, whatever part of the earth has been tried, the air has been found to possess the same density and composition at normal pressure and temperature of mean sea-level. There is one grand and beneficent property of the atmosphere which, although universally known in its action, is seldom specifically alluded to. That is, that it is a universal solvent, and though without smell in itself, it is the medium of all smelling, and the deodoriser of all odour, whilst through it move the subtle and mysterious agencies of heat, light, electricity, and magnetism.

Having now given some brief explanation of the material from which meteorological science has to deduce practical results, we will at once present to the reader a slight sketch of the instruments and their work as we have seen them at Kew; and, first of all, let us take the barometer.

The name barometer is really a contradiction in terms. It is

compounded from two Greek words—*baros*, weight, and *metron*, measure; otherwise a measure of weight. To *measure* weight seems, however, quite out of the common order of things, and many friendly wagers have arisen upon it. How it came to have that name would be now too curious to inquire. The common sense of it appears to be that the weight of a column of air is weighed against a column of mercury, the result being *measured* by inches and fractions of an inch upon the index scale on account of the mercury rising and falling.

Without going into the oft-told tale of nature abhorring a vacuum between Galileo and the pump-makers of the Duke of Florence, it is to the philosopher that the inception of the principle of the barometer is generally given. But Galileo died before he had solved the vacuum problem, and was succeeded by his famous pupil, Torricelli, who, after many experiments, ascertained that mercury being in round numbers, bulk for bulk, fourteen times heavier than water; then, if the atmosphere would sustain by pressure a column of water 32 feet high, one of mercury of 28 inches would be supported under the same conditions. And this was actually what was demonstrated, and the principle of the mercurial barometer established at once. Torricelli died in 1647, without having shared in the glory of his great discovery. But the philosophers of Europe took up the new wonder. Gay-Lussac, in France, tried it in a balloon, at the height of nearly five miles, and that great distance upwards, supplemented by minor ones, beginning from the sea level, always gave the same comparative results with respect to atmospheric pressure. What was more, such pressure under similar conditions, with corrections for temperature, gave the same readings in every part of the globe where trial was made. To the French philosopher, Pascal, is due the honour of having, in 1647, suggested the application of the barometer to measuring heights, whether upon mountain tops, or at the greater elevation of the balloon. De Luc went up five miles.

Notwithstanding the many forms that the instrument assumed, the scientific world ultimately settled upon that known as the *Fortin* for its standard. This barometer is, in reality, a Torricellian one, with these improvements. The mercury is contained in a glass or iron cistern, and can be adjusted to the point of an ivory needle which denotes the zero of the scale for observation. Furthermore it can suffer no error from the loss of mercury by oxidation, whilst air in the tube is easily detected, and as easily removed.

Such are a few of the more salient facts connected with the science of meteorology, and as the relation of them has carried us across the park, let us mount the dwarf flight of steps and enter the building itself.

In the entrance-hall we see upon the walls several portraits of scientific worthies, together with some instruments of a by-gone age. Turning to the left we enter the "Verification Room," and here the real scientific festival begins. In this room we find ourselves surrounded by testing-chambers and meteorological instruments of various kinds. But the crowning attractions of it are the two standard mercurial tubes. They are to the visitor really marvellous to look upon. They are mounted on iron frames, side by side, and are inclosed in an upright rectangular glass case. The lower end of each tube is in its mercurial cistern, whilst the upper end is attached to the frame-work. The "reading" of these instruments is quite different to anything of a similar kind that is seen outside a meteorological observatory. The standard tubes are about 1·1 inch internal diameter, and 38 or 39 inches high. There are no graduated scales affixed to them, and we must go to another ingenious instrument for obtaining a record of their work. The barometers are known as "Welsh's," and the instrument by which they are observed is called a "cathetometer." The name-root is from a Greek word. *Cathetus* is a word of several meanings, but in this case it is the *cathetus of reflection*, or a right line drawn from the eye to the reflecting plane, which here would be the column of mercury, whilst *metron* will be easily understood. Mr. Casella, Messrs. Negretti and Zambra, and, we believe, Mr. Hicks, are the principal makers of these instruments. As a brief sketch of one will answer every purpose, we will merely say that "There is a massive triangular prismatic bar of gun-metal, capable of revolving about a vertical axis between pivots provided with a bilateral adjustment, and attached to the arms of a very strong bracket, which can be rigidly fixed to a pier or observatory wall.

"Upon this bar is fixed a silvered scale, divided in inches and millimetres, which is so graduated as to read true at a temperature of 0° Centigrade. The actual temperature of the instrument at the time of reading is ascertained by two thermometers, which are fixed to the bar about a third of the distance from the top and bottom respectively; so placed as not to interfere with the travelling of the telescope support. This support,

moving up and down without shake, carries a vernier and lens, which allows of a direct reading of ·001 inch, or ·1 millimetre, and is provided with a clamp and fine rack adjustment. To it is also attached a telescope with level, carried in Y-shaped supports, in which it can revolve, and having a tangent screw adjustment, which enables the telescope to be moved through a minute space. Cross-wires are provided, and two eye-pieces—one erecting—the other inverting—and if desired a micrometer eye-piece can be added. The telescope and its supports are counterpoised to prevent falling when unclamped, and to guard against any lateral strain of the bar. Thus every error in the verticality of the axis of the bar, as well as of level and collimation of the telescope, is capable of adjustment by the observer himself."

The cathetometer is placed about 5 or 6 feet away from the barometric column to be "read," when, upon looking through the telescope, and adjusting the movable cross-wire, one is startled at the accuracy with which the wire cuts the surface-edge of the mercury.

The vernier, which regulates the reading on the cathetometer scale, and upon all good barometers as well, is the invention of Peter Vernier, about the year 1690. It is a short scale, made to slide beside that of the barometer one, so that readings can be taken by tenths and half-tenths to the thousandth of an inch.

Before the observer can compare his barometric readings from the standard instruments at Kew, he must allow for what is known as capillary attraction, with capacity of cistern and temperature. Attached to the barometer is a short tube, filled with mercury, in which a thermometer is constantly kept, and by that means the temperature of all the mercurial tubes in the room is known. Such are the great standard instruments, and their belongings, from whose proportions, modified according to circumstances, nearly all the barometers of the world are made. As we have before remarked, they are wonderful to look upon. In the same room is the old standard instrument, made by Newman many years ago. It consists of two mercurial columns. One tube is made of flint and the other of crown glass; the object of using two kinds of glass was to ascertain if the capillarity of mercury was affected by one quality of glass more than by another. The result showed that such was not the case. This instrument has been recently repaired by Negretti and Zambra, and is now in good condition.

In addition to the standards, the Verification Room has a large

number of other barometers undergoing, as it were, their final examination. Of these the principal one takes the name of the building itself.

We will now speak of that fine instrument, whose virtues and whose warnings are known wherever the sail of a civilised people swells on the sea, or a keel ploughs the ocean ; and that belongs to all nations alike.

The Kew Marine Barometer is the outcome of the Meteorological Conference, held at Brussels in the year 1853, which did a vast amount of good work for meteorology, and was attended by scientific men, whose attainments in their several departments were guarantees of their quality. Among other things they strongly recommended, as a matter of duty, the adoption of accurate barometers and thermometers in the work of ocean navigation. The important difference between these and the Kew Marine Barometer is, that the "Kew" is as reliable as a standard barometer on land; it also prevents the mercury jumping, as it were, from the motion on board ship.

The instrument under notice is made of glass, brass, and iron ; the glass for the mercury tube, the brass for "furniture," and the iron for the mercurial cistern, as that fluid, mercury, has no effect upon iron. It has an air-trap to prevent air getting into the tube with the mercury. The top of the cistern is covered with strong sheepskin, and is perforated to admit the air upon the fluid, so that atmospheric pressure shall be uninterrupted. The glass tube is inside another one of brass, which also serves as a frame, whilst provision is made that the glass shall be well cushioned to prevent breakage in the event of storms or guns firing on board of ship. It moves on gimbals, has a brass arm to attach it to the partition of a cabin clear of the woodwork, and it can be turned in any direction so as to be easily read. The vernier scale is of porcelain, and is marked to read to the five-hundredth of an inch. Take it altogether it is as fine an instrument for its purpose as human skill or ingenuity can devise.

In the same room, with both the standard, marine, and other barometers, there is what is called a vacuum chamber. This chamber is constructed for the purpose of producing atmospheric pressure by artificial means in order to test the barometers with greater rapidity than is possible in any other manner. The method of testing is to place a standard barometer in the chamber and surround it with those that are to be tested. The chamber, of course, is air-tight, and when all the instru-

ments are arranged it is closed, and the air-pump put into action. First of all the air is drawn off to a degree that will make the standard instrument, and by similarity all the others, read lower than can probably happen in actual practice. A gradual progression then takes place until the air is compressed so as to force the mercurial column higher than the natural atmosphere is ever likely to rise. The sea-level is taken as the datum, and every degree between the lowest and the highest is carefully noted on the standard. It may be stated that the upper part of the exhausting chamber has plates of glass fixed in it, so as to see what the mercurial columns are doing, whilst there are means to enable the tester to read the height of the mercury in each instrument upon its scale, and to adjust the standard one to the point of zero. The way by which the height of the mercury in the testing chamber is read is by an instrument similar to the cathetometer, whose construction and action have been already explained.

In addition to the use of the barometer, both on land and sea, its value in the coal-mine is very great. When carefully noted, it may be, and often is, the means of preventing those destructive explosions which we have from time to time to deplore. In the process of coal-getting the miner's pick liberates from the stratified coal the gases known as "fire-damp" and "choke-damp." Those gases find their way into the workings of the mine where the ventilation is of the weakest kind, and by mixing with the air there, form a highly explosive combination; so explosive that, as we all know, the slightest contact with a naked light instantly scatters death and destruction around. Although the barometer does not of itself indicate the actual presence of fire-damp, it shows when a reduction of atmospheric pressure may enable gases to issue from cavities wherein they may be compressed. By attending to the rules laid down, the mercurial column may give a sufficient warning to the men to cease working at once, to extinguish their lights, and place themselves in safety until the danger has passed. To one who is somewhat conversant with these matters, it seems to be a marvel of culpability that all mine managers are not compelled under a heavy penalty to have reliable instruments in every mine, and a sufficiently intelligent miner to look after them.

But there is another instrument connected with the mercurial barometer, and that is the hygrometer.

The Hygrometer, like many scientific instruments, takes its

name from one of the classic languages. It is formed of two Greek words—*hugros*, moist, wet, and *metron*, to measure, and a most befitting name it is, its function being to measure the moisture of the air. Apart from this, however, it is much used in physical experiments for the purpose of ascertaining the quantity of watery vapour in certain gases.

We must not omit to mention the aneroid barometer, the invention of M. Vidi, of Paris. It takes its name from two Greek words glued together, signifying "without fluid." It consists of a metallic box, with the sides formed of thin corrugated plates and an arrangement of levers and springs in a box, with a dial properly marked with weather words and a hand to point to them. The finer kinds have a circular scale on the same dial to denote the heights of ascent, the instrument having been found equal to the measurements of from 16,000 to 20,000 feet. They are of great value at sea, where the marine barometer could not be conveniently carried, such as boat service, &c., without the risk of being damaged or broken.

The reason why we have gone into so much detail about barometers has been that upon the mercurial column the great superstructure of both scientific and practical meteorology justly rests.

The next objects of our attention are the thermometers, and on account of the different scales of those most in use a word or two of explanation will be necessary.

The fluids used in good thermometers are mercury and alcohol, each having its favourable and unfavourable aspects under certain conditions. Mercury is more sensitive to heat, and consequently more in use, whilst alcohol has the drawback of being slower in that way. For very cold countries, however, alcohol has the advantage of only becoming congealed at very low temperatures, and is believed never to have been actually frozen. The reader may here be referred to Sir George Nares's experience in his Arctic Expedition. Mercury freezes at 38° below the zero, or lowest point, of Fahrenheit's scale, which is the one that we use.

The thermometers designed for observing atmospheric temperature are graduated with one of three scales, called respectively, Fahrenheit, Centigrade, and Réaumur. The Centigrade is the production of Andrew Celsius, philosopher, of Sweden, who lived between the years 1701 and 1744. He wrote upon astronomy, meteorology, and the aurora borealis. In his

"Thermomètre Centigrade" he fixed the boiling-point at 100° and the freezing-point at 0°. Réaumur also fixed the freezing-point at 0°, and the boiling-point at 80°. Réaumur was a German, and his scale is used all over that country. Fahrenheit, on the other hand, is adopted by all English-speaking nations; indeed, wherever the English language is spoken. His freezing-point begins at 32°, and his boiling-point at 212°. To explain the reasons why these different scales were arrived at would occupy too much space in this paper. We will, however, just give a word or two of explanation about Fahrenheit's because it is the only one in general use among us. In this scale the mercurial tube is immersed in melting ice or snow, and is left there until the fluid becomes stationary. When that occurs a mark is made upon the glass, which mark is to denote the freezing-point. After that the instrument is gradually submitted to the action of steam arising from freely boiling water, in which it is allowed to remain until the mercury will ascend no higher. A second mark is then made upon the tube, and that mark is called the "boiling-point." The space between these two points is divided into 180 equal parts, whilst *below* the point of freezing thirty-two of these parts are marked down the tube, the lowermost one being called "zero." The reason for that was that the bulb of the thermometer was left for a considerable time standing in a mixture of snow and common salt on specially selected cold nights, and in equally exposed cold places, these combinations producing the largest amount of cold that could be made by nature and art at that time. Such, consequently, was the way, and such were the principles that guided Fahrenheit in the construction of his scale. Its great advantage is, that it is much more readable for sensitive change in having shorter degrees from freezing-point; that is 212°, instead of 80° and 100° respectively.

The testing of fluid thermometers at Kew is a very interesting operation; it is conducted on Galton's system. There is a copper cylinder, properly erected, containing from 10 to 20 gallons of water. It has openings glazed with panes of glass, and inside is a frame in which is placed a standard thermometer, and the number of those that are to be tested. In the centre of the frame, clear of all the tubes, are a set of blades on a shaft which can be readily turned by a handle from the outside, to violently agitate the water so that its temperature shall be equally distributed. By means of gas jets this water can be raised in temperature to the desired point, and by contrary means it can

be reduced to zero. A second handle brings each thermometer under the eye of the observer to enable him to note the position of the mercury in comparison with the standard tube. There is, furthermore, an hydraulic press for testing deep-sea thermometers, which can be made to exert a power or weight upon the instrument as high as four tons to the square inch.

This, perhaps, may be the most appropriate place to state that the Kew Committee of the Royal Society will receive at the Observatory barometers, thermometers, and other instruments intended for meteorological and scientific purposes for comparison with the standard instruments and for verification. Any persons ordering instruments from opticians may have them forwarded by them to Kew for the above purposes. All instruments so verified will leave Kew with a certificate, the Kew Observatory letters OK as a monogram, and a registered number. Clinical thermometers for medical use, hydrometers, theodolites, sextants, compasses, magnetic instruments, and many others of a scientific character are also tested and verified at the Observatory. It is recommended that all thermometers intended for scientific purposes should be stored at least for twelve months before being graduated. This is done that the tubes may have time to "set," as it were, and not alter after being tried and graduated. To assure the public in this respect the superintendent will place such tubes in sealed boxes until the time for testing them arrives. The charge for this careful work is extremely moderate, commencing with some things even as low as a shilling. We were informed that at least a thousand tubes a-year were tested for general use. We also saw an instrument called the Hypsometer, whose business it is to determine the heights of mountains by means of the boiling-point of water. It consists of a delicate thermometer ranging from 180° to 212°, a small copper boiler and its tubes, some clear water and a spirit lamp. The steam of the water raises the mercury in the thermometer to a degree corresponding to the elevation and the latitude, and keeps it there! There is a carefully computed set of tables, and, upon glancing at them, it seems that the higher we go the lower the temperature at which the water will boil; thus, at the sea-level it will be at 212°, whilst at a great height the boiling-point will be only between 180° and 190°. The tables give the elevation in feet for each degree of the boiling-point thermometer, so that the results can be seen by inspection.

Passing on our way we may see a standard clock for the use of the Observatory only, tabulating instruments, and specimens of meteorological, magnetical, and electrical photographs.

In the thermograph room there are a thermograph, an electrograph, and chronometers. A few words of explanation will be of service here.

The two instruments, namely, the Barograph and Thermograph, may be spoken of at the same time. They are self-registering, and are known as "Beckley's." Their work is that of recording by the action of photography the changes that take place in atmospheric pressure, temperature, and moisture. They are in darkened closets, in which artificial light alone is used. The Barograph is to register the barometric pressure, and by means of a clock and nicely-adjusted mechanism it will give such record for twenty-four hours on the photographic paper that encircles a drum; this paper also gives the times of the changes either night or day without any attention whatever from the observer beyond that of ordinary supervision. The Thermograph does the same for temperature in a similar manner, the paper drum turning once round in forty-eight hours. The mechanism of both these instruments is necessarily complicated, but most ingenious in design and construction.

Perhaps one of the most extraordinary combinations of ingenuity throughout the whole range of science is to be found in the magnetic instrument. This curious achievement of theoretic and practical science is built up, so to say, in the underground area of the Observatory, called the Magnetic Basement. It, too, does its work in the dark, except the necessary slit lights, to enable the observer to see its action. It is a self-recording instrument for the daily and hourly study of the magnetic elements; but it has many parts, and occupies considerable space. The importance of such an instrument may be comprehended when we add that Professor Balfour Stewart read a paper at the recent meeting of the British Association, wherein he showed that, by watching the waves of terrestrial magnetism, the weather may be meteorologically forecast for something like a fortnight. Three conditions of magnetism can be seen, namely, declination, horizontal and vertical forces. By means of lenses, mirrors, and spots of light thrown on the photographic paper, which is moved continuously by clockwork, the observer can see if the magnetism of the earth at that place is in motion or in a state of rest. If in a state of rest. a straight line is traced upon

the paper; if in motion, a zig-zag line; the angles of each turn and return, giving evidence of the nature of the magnetic waves. There are lenses, and mirrors, and magnets, and many other parts that go to make up this singular instrument. Not the least startling part is, that when a magnetic storm is passing, similar indications will be seen in the light spots just mentioned as are taking place at precisely the same instant thousands of miles away! The magnetic recorders are, by the nature of their construction, very costly; indeed, a full explanatory description of one of them would require to be well illustrated, and would demand a paper almost to itself.

We were shown the method of testing sextants for errors of graduation on the index. The instrument is placed upon a central stand and has to bear the ordeal of five "collimators." Upon looking at this the importance of the sextant, itself, is established upon a very high level indeed. The examination shows beyond all dispute if the degrees, minutes, and seconds have been correctly marked upon it or not. In the same room a brass plate records where Captain W. J. Heaviside, R.E., swung the Russian pendulum in connexion with some Indian observations. We saw Sir William Thomson's electrometer for registering atmospheric electric variations, and in another room was an apparatus for swinging pendulums. On the first floor was the new candidate for acceptance into the meteorologic circle—the glycerine barometer, and that very essential adjunct to an observatory, namely the library and superintendent's office. We entered here and found the room vacant. We timidly asked if the world-famed "Clerk of the Weather" could be seen, bodily, but were answered by an ominously negative shake of the head. Upon the second floor we saw the mechanism of an anemometer, De la Rue's micrometer for measuring solar negatives or pictures of the sun.

The anemometer has its name-root from the Greek word, *anemos*, wind or air. Most of our readers have seen four cup-vanes at the upper end of a shaft above the roofs of learned institutions, and philosophical instrument makers of a high class, such as those mentioned in this paper. Perhaps few have seen the mechanism, the wheel-gearing in the inside of the house. Anemometers are of several kinds as well for external, for internal, and for subterranean purposes. They are to be found in the ventilating of coal and other mines, between ships' decks, in hospitals, and upon the highest elevations of buildings. The

principle in all is the same; namely, the revolution of a central shaft by motion given to it by wind-cups, or vanes, the lower end of the shaft moving a worm and wheel, or a series of wheels which have arbours through them, with index hands and dials much after the plan of a gas-meter; the latter, indeed, being only an anemometer for registering gas. The other instruments register the speed of air, and the wind, as the outside air in sensible motion is termed. We went on the roof and looked at an ingenious little thing called a sunshine recorder, to mark how long the great luminary is seen by us each day.

The sunshine recorder is a sphere of glass mounted on a polar axis which rests in a suitable framework and stand. This axis can be set to coincide with the polar one at the place of inclination, whilst a graduated circle will adjust it to its working latitude. The supporting frame has movable card-holders adapted to receive straight cut strips of card all to fit, so that when one is done with, another can instantly be put in its place. These cards are cut from Bristol board, tinted with Prussian blue, and divided into slips 13 inches long, by $\frac{3}{4}$ inch wide. The larger sized card-holder is used in the instrument during the months of May, June, July, and August, and the smaller size during the rest of the year. The ray of sunshine passing through the glass globe, leaves its path along the card, and the hours are marked by a pencil, from hour to hour.

In the dome we saw the great photoheliograph with which Mr. De la Rue took sun-pictures during the eclipse in Spain in 1860, and was worked daily until 1872.

Proceeding to the grounds we entered a small garden-house which contained a magnetometer, a dip-circle, and apparatus for determining magnetic constants; all highly scientific. That little place was a small magnetic observatory in itself. Arranged about the lawn were rain-gauges and thermometers of various kinds for out-of-door purposes, whilst, as a crowning of the whole, there was an old Dollond transit instrument in the transit-house, and two obelisks, one on the river bank, and one in the park; the latter to denote the meridian line through the building, whilst the former served a similar purpose for the magnetic observatory.

The result of the work done at Kew reaches "far and wide," and is of inestimable value to the public in various ways. The computed numerical details derived therefrom are published by the Meteorological Council, in conjunction with those similarly

derived from the six affiliated Observatories which have previously been mentioned. The magnetical and electrical data are discussed, and the conclusions deduced appear from time to time in the form of papers in the "Proceedings" of the Royal and other learned societies. Periodical information is also supplied to the press, as well as to private individuals, at the cost of the mere clerical labour entailed in its extraction.

We will now bring our very instructive and pleasing visit to a close. In doing so we beg to tender our sincere thanks to the Kew Committee of the Royal Society, and to their representatives at the Observatory, Mr. Whipple, the superintendent, and Mr. Baker, his assistant. To the superintendent's kindness we are indebted for the suggestions that have impressed the stamp of confidence upon this paper, which it would not otherwise have deserved. To the last-named gentleman we are also on the owing side, for his having so teachingly acted as our "guide, philosopher, and friend" among those wondrous and mysterious agencies of weather-wisdom and meteorological lore.

In finally concluding this paper I deem it incumbent upon me to state two things. The first is that the Kew Observatory is not for astronomical purposes; and the second is that the public have "no right of way" there whatever. In its work it takes no cognizance of "the law and rule of the *Astra*." The Pole-star may either quicken or retard the revolutions of *Ursa Minor* or *Ursa Major*. *Arcturus* on the Great Bear's tail may shed his glory, *Venus* in her morning or evening's brilliancy may attract all eyes, the *Pleiades* in their dim and distant autumnal wanderings with their travelling companion *Aldebaran*, are not for the stern duty of our "Clerk of the Weather." Comets may come and comets go, *Sirius* may blaze, *Jupiter* call forth our admiration, and the grandeur of *Orion* turn our thoughts from the wonders of the Milky Way, not for them are the mental powers of Kew. The silent, ever-working Observatory has to do more with the phenomena of the earth, earthy, and the prime causes of those phenomena. Sunlight and moonlight, and heat, and cold, and frost, and rain and storm, and wind, and thunder, and lightning, and the mysterious magnetism, the envelope, the globe, both upon sea and land, are what the investigating minds of Kew have to deal with day by day, and night by night, and from month to month, and all around "the starry girdle of the year."

CHARLES STUART MURRAY.

P.S.—It will be interesting to mention here, with an expression of regret that want of space precludes a description, two additions to the scientific armoury. The first is named the Casella-Goolden doubly-adjustable electrical Sixe's thermometer. We have seen this instrument "at work," and it certainly is a marvel of its kind. It consists of the well-known Sixe's double tube, mounted on a frame, with the graduated ascending and descending scales. The electric wires are inside each tube, and, on the one hand, if the mercurial column rises higher than its index has been set for, the circuit is closed, and the bell rings to call attention to that fact. On the other hand, if the mercury in the descending tube falls below its index, the circuit is again closed, and the bell is again set ringing. For hospital wards, sick rooms, public buildings, ships at sea, and manufactories, the range of the temperature can be rung upon one or more bells at any distance from the place of the instrument itself.

The second arrangement is by Messrs. Negretti and Zambra. This new apparatus consists of twelve thermometers, mounted on a suitable stand, a good clock, and a galvanic battery. The advantages are—simplicity of manipulation, both in taking the recorded readings and setting the thermometers for future observations; the most important one, being able to expose the thermometers *at any distance from the clock and battery*—the only limit being the length of the conducting wires and the strength of the battery. Each tube is in a pivoted collar, and when its hour of duty has expired it capsizes, falls head downwards, and remains there until raised by an attendant. The value of the arrangement is this: Let it be supposed that the twelve tubes are for any twelve hours of the day whose separate hour-temperatures it is desired to know. Each tube can be inspected as soon as it has turned over on its pivot, or the whole twelve can be examined on the following morning, when the temperature of each will be registered on the scale at the end of the hour at which it fell. We have also seen these thermometers "in business," and it is hard to say what wonders Science will next produce. It is now known that the moon is the shape of an egg, and that the small end is that which has always shone upon the earth. Is some near future generation to see Lady Luna turned round, and the large end presented to them? Verily, on the arrival of that event the electric light would have to look to its shine and its shares as well.

C. S. M.

THE GREAT INTERNATIONAL FISHERIES EXHIBITION.

THE Great International Fisheries Exhibition of 1883, held in the permanent Exhibition Buildings at South Kensington and in the grounds of the Royal Horticultural Society, covering in all an area of over twenty-two acres, may fairly be said to have been one of the most successful of exhibition enterprises ever taken in hand, either in this or any other country, both as regards the character of its display and the number of persons who visited it. Its magnitude may in some sense be estimated by the fact that the catalogue of its exhibits filled over 500 closely printed pages; and it would require many volumes even briefly to describe the most important of them, or to touch even in the most cursory manner on the numberless points of interest and commercial importance they suggested, and indeed brought into prominence. In the present article therefore, after a brief reference to former Fisheries Exhibitions, and the position and value of British fisheries, we propose to confine our remarks to the methods pursued by British fishermen in gathering in their share of "the harvest of the sea," as illustrated at South Kensington. And even on this subject our descriptions must be imited to some of the chief of these methods, as the field they really cover is almost inexhaustible.

Of the eighty or ninety exhibitions, large and small, which may be said to be the offspring of the great World's Fair in Hyde Park, in the year 1851, many have paid some attention to fish and fishing, and some few have made this their principal object. First, in order of date, and also of importance, comes the Exhibition of Amsterdam, as far back as 1861, the classification and arrangement of which provided a model for the others of the kind which have been held since. The ramifications of the subject are astonishing. To classify fish according to their characteristics is no light task in itself; but that is the merest trifle in comparison with the economic relations involved. Improvements in implements, improvements in fishermen's homes, improvements in the apparatus for saving life so constantly and so carelessly imperilled; the utilisation of products, the development of commerce; arrangements for conveyance, for sale, and for distribution; arrangements for apprenticeships, for harbour accommodation, for culture, and for acclimatisation, are a few of the topics to which this subject gives rise; and it is,

therefore, no slight merit to have opened the eyes of the world to this vast field of utility and wealth. The object in view at Amsterdam was to instruct the population of Holland in the various modes in which fishing was carried on all over the world. Four years after this exhibition, Boulogne and Bergen opened their doors to the fishermen; Havre followed with a maritime exhibition in 1875; and in the same year Philadelphia presented a curious collection of papier-maché models of the principal fishes and crustacea of the United States. Finland in the following year devoted one section of its exhibition to forestry, hunting, and fishing. And it must not be forgotten that, in 1877, there was held at the Westminster Aquarium a "Maritime and Piscatorial exhibition," the first of its kind in this country. In 1880, Berlin instituted her great Fisheries Exhibition; and in 1881 the success of the Norwich Exhibition was very marked. In 1882, Edinburgh followed suit with similar success; and in the same year Denmark had an exhibition of fishery produce, apparatus for artificial fish-culture, and utensils of every description employed for fishing purposes, in conjunction with an agricultural exhibition held at the same time at Svenborg, in the Danish island of Fuhneu. Again, too, not long since, our Dutch neighbours invited all the world with sporting proclivities to come to Cleves, and assist at an exhibition of sporting appliances, "engines" and *impedimenta* connected with the capture of animals, *ferœ naturæ*, whether denizens of land, air, or water; and consequently piscatorial appliances held a conspicuous place. But the great Fisheries Exhibition in London was the outcome and climax of its predecessors. The members of the Royal Family, and especially the Prince of Wales and the Duke of Edinburgh, took an active interest in this exhibition; while the Executive Committee, with its chairman, Mr. Birkbeck, M.P., and the whole staff of officials were unwearied in their exertions to make the project a success.

It is almost impossible to exaggerate the importance of the "harvest of the sea;" and the Exhibition of 1883 will have done a great service, if only in impressing upon us the magnitude of the British fisheries industry. Statistics in reference to this are very interesting. It has been stated that, at the lowest calculation, 550,000 tons of fish are annually taken in British waters by our own fishermen. Of this quantity "Greater" London consumes over 130,000 tons, which is equal to 1,000 bullocks

daily, and represents roughly speaking, 90 lbs. of fish per annum for every man, woman, and child in the metropolis. This 550,000 tons is estimated as worth 11,000,000*l.* sterling. About 35,000 boats and vessels are employed in our fisheries, and about 110,000 men and boys are actually afloat. The above figures are semi-official, but many statisticians have put them much higher. For instance, it has been reckoned that there are little short of 200,000 fishermen on our coasts; but perhaps these figures may include some shore hands, and even women, who take an active part in the fishing industry. Then again, our yearly supplies of fish food have been set down by competent authorities as worth at from twelve to sixteen millions of pounds sterling, a large portion of that sum being expended in wages to fishermen, and in payment to those who build their boats and vessels, and make their nets and canvas. Some statistics however, are still more trustworthy; for instance, those in reference to the Scotch herring fishery. Taking the average of the last five years, the annual value of Scotch herrings, fresh and cured, is equal to three millions sterling. The English and Irish herring fisheries may be reckoned at worth two millions. The mackerel fishery is also a very valuable one, and is pursued all along our coasts as the fish move from district to district. The harvest at Lowestoft and Yarmouth is during the months of May and June, and the fish are often so abundant that twenty thousand are taken in a single night. At Yarmouth this mackerel fishery employs ninety boats, with a tonnage of upwards of 3,000 tons, and nearly nine hundred men, producing about twenty thousand sterling a year.

Some interesting calculations, recently made *apropos* of the Exhibition, are as follows:—The annual value of herrings is put at over five and a-half millions sterling, of all kinds of round and flat fish at six millions, and of shell-fish of all kinds at three and a-half millions. Ten million pair of soles are annually consumed in Great Britain and Ireland; and seventy-two million oysters annually in London alone. Forty thousand pounds represents the annual value of whitebait brought to the metropolis. Sprats are consumed to the amount of sixty thousand sterling per annum in Great Britain; and the demand for "Finnan haddies" is so great, that more than twenty-five million haddocks come into the "curers'" hands every year.

As one instance, among many, of the great development of a fishing industry, may be mentioned that connected with Great

Grimsby. In the year 1853 there were but twelve fishing-vessels in the port of Grimsby, and few facilities for trade. At the present time there are 825 vessels belonging to the port, solely engaged in fishing, with an estimated registered tonnage of 42,000, valued at 725,000*l.*, and carrying 4,710 men and boys. Besides the above, the port is frequently visited by many Dutch and other fishing-vessels for the sale of their cargoes. The total area of fishing-docks is 23 acres, with a market attached 1,600 feet long, where, in the year 1882, over 73,000 tons of fish were landed. The railway company has expended nearly half a million sterling in the making of docks, and otherwise providing for the fishing trade, and is still extending the various market conveniences. The capital invested in the fishing trade of Grimsby may be put at a million sterling; and no less than 30,000 persons out of the population directly or indirectly obtain a livelihood from the fishing industry.

There is, and has long been, an impression that many of our sea fisheries are less productive now than formerly, and that the epithet of "barren," which Homer was once so fond of applying to the sea, may ultimately be applicable in another sense to that great liquid storehouse of food, to which the Exhibition at Kensington was a striking tribute. To disprove this fallacy, the cumulative testimony of all the greatest authorities in the world upon the prodigious and inexhaustibly prolific abundance of the resources of the ocean, might easily be adduced. The sea, it is well known, covers nearly two-thirds of the surface of the globe upon which we live; or, as Michelet puts it, "on the surface of the globe water is the rule and dry land the exception." It is natural that man, who descends into the bowels of the earth in pursuit of the precious metals, should also explore the depths of the ocean in search of that food with which M. Louis Figuier tells us that it everywhere abounds. Accepting Mr. Spencer Walpole, late Inspector of Fisheries to the Home Department, for a guide, one is almost tempted to wonder how, in presence of the inconceivable fecundity of the herring, there is room enough in the sea even for this single fish, without taking the many other finny denizens of the deep into calculation. "We know," observed Mr. Walpole, "that the Scotch fishermen, on an average, take thousands of millions of herrings every year. We know, also, that the Norwegian fishermen take from the North Sea another thousand million of herrings per annum; while I am sure that, from the same source, other fishermen take at least

another thousand million." Mr. Walpole then proceeds to show that predacious birds and fishes kill at least as many herrings annually as fishermen do; and therefore it may be assumed that man and other enemies draw no fewer than six thousand millions of herrings annually from one small district of the boundless ocean. "Now, I do not suppose," he continues, "that any one with the least knowledge of the subject would pretend that all these enemies of the herring, acting in combination, catch one out of every hundred that the North Sea contains. To put myself, however, beyond the possibility of error, I will assume that they catch one in every two. Thus, at the end of the year, the account must be six thousand millions of herrings taken and six thousand millions left." Supposing that of those left half are females, it is obvious that, to maintain the stock, these females must produce two herrings apiece to make up the needed complement of twelve thousand millions for next year. The female herring does not, however, lay two eggs—she lays from twenty to thirty thousand. If she is deemed capable—which is less than the truth—of laying ten thousand eggs annually, it is obvious that nature intends man and the herring's other enemies to destroy five thousand finny victims of this class, expecting that out of the remaining five thousand nearly all should perish. "If it were not so," adds Mr. Walpole, "the sea would be full of herrings."

Of a like nature is the evidence contributed by Mr. Frank Buckland. Those who read his remarks upon the amazing powers of reproduction possessed by the herring family, "which includes the common herring, the pilchard, the sprat, the two species of shad, and the anchovy," need not entertain any apprehension as to the approaching exhaustion of our ocean fisheries, upon which so many sciolists and pessimists are fond of descanting. Professor Huxley has always maintained the same views. In his inaugural address some months ago in connection with the conference at the Fisheries Exhibition, he urged that the supply of cod, herrings, and mackerel was practically inexhaustible. As an illustration of this, in one instance, he alluded to the "coming-in" of the cod on the coast of Norway in the months of January and February, which is one of the most wonderful sights of its kind in the world. The fish then form what is called a "cod's mountain" of from 120 to 180 feet deep, and the fishermen, when they let down their loaded lines, feel the lead knocking against the bodies of the fish for a long

time before it gets to the bottom. The professor said that, allowing each fish to be four feet long, and to be a yard apart, there would be in a square mile of such a shoal something like 120,000,000 fish—a calculation which he said he believed was considerably under the mark. He went on to say that, as herrings were the main food of cod, if they allowed each cod in a square mile but only one herring a-day, they would consume in the course of a week 840,000,000 herrings. He believed that the whole Norwegian herring-fishery had never yet reached half that total of fish; and, further, that all the fishing operations of all nations of the earth did not result in catching five per cent. of the fish which were the subject of the great sea fisheries—namely, cod, herrings, mackerels, pilchards, and the like.

At the same time, however, there is no denying the fact that various fish, once abundant, have, more or less, disappeared from their wonted banks, and that fishermen, in some instances, have to go three times as far to sea, and to use three times the length of net and tackle than formerly to keep up their takes. The cause, or causes, of this disappearance of fish from certain fishery-grounds have been treated on in some of the essays which were sent in to the Committee of the Exhibition, and the matter was discussed at the Conferences. It may be, as some economists assert, that the number of quadrupeds whose flesh affords food for mankind, are decreasing absolutely and relatively, if compared with the increase of the population of the earth. Some economists unhesitatingly assert that the supply of fish is decreasing, and certainly they might instance soles as fish which have of late years become scarce, and consequently very dear. However, the old saying is true, that "There are as good fish in the sea as ever came out of it," and as many. What is required is, that they do come out of it, and in such quantities as will enable them to be sold to the masses of the people of these islands at a moderate cost; and, at the same time, that the working fishermen receive a fair remuneration for their arduous and dangerous labour.

It is hardly necessary to say that the capture of sea fish by means of nets is the chief subject to which the Fisheries Exhibition draws attention. Of all modes of fishing, that known by the name of trawling, or beam-trawling, is the most important. It is calculated that, by this method, as much as nine-tenths of our fish-supply, not including herrings and pilchards, is obtained. The centre, so to speak, of this trawling, is the Great Dogger

Bank, in the North Sea or German Ocean. It is from this vast field that the London market, and most of the country ones too, are mainly supplied with soles, turbots, and brills, which are technically termed "prime" fish, and with the tens of thousands of tons of cod, plaice, haddocks, whiting, and other commoner kinds. This great fishing-ground lies between the coasts of the British Islands and those of Norway, Denmark, and Holland; and principally between the mouth of the Humber and the Skagerrack, on the north-west of Denmark. It is some 300 miles long, with an average breadth of 70 miles; and the area may be roughly stated as 20,000 square miles. It is to this great centre that the British, Dutch, French, Danish, and Norwegian trawling-vessels resort with their crews of hardy fishermen, who, of all "toilers of the sea," have the hardest, roughest, and most dangerous work to do. The chief ports of departure for British trawlers are Hull, Great Grimsby, and Yarmouth. Some few hail from Ramsgate, and the Port of London, which latter not many years ago included the famous fleet of Barking fishing smacks, numbering, when that now decayed town was at the height of its prosperity, some 250 sail of vessels. They have of late years made the east coast at Yarmouth and Gorleston their head-quarters. These vessels, which run from 60 to 100 tons or more, the largest generally hailing from Hull or Grimsby, carry crews of seven or eight men and boys, and remain on the fishing grounds for several weeks together, the fleets being visited by steam "carriers" as they are called, which take the fish from them, and run them up to London direct, or land them at some port on the coast, to be taken thence by railway to the metropolis or provincial centres of population. Steam trawlers have of late years been gradually coming into use, and every year will probably see an increase of their numbers.

From certain points of view the Trawl-net seems but a rude and simple contrivance, but its adaptability to its purpose cannot be denied. In a general way it may be spoken of as a large bag-net, something in the form of the letter V, tapering almost to a point. Its length for ordinary deep-sea fishing varies from 70 to 80 feet, and its breadth at the mouth from 40 to 55 feet, trawls for pleasure yachts and for shrimping, being of course, much smaller. The mouth of the net consists of a beam of wood attached to and supported by two heavy frames of iron, called the trawl-heads, in the shape of the letter D, the curved side of which points away from the mouth. They stand

between 3 and 4 feet from the ground, and this forms the opening of the net, the upper part of which is lashed to the beam. But the under part of the net, attached at each end to the feet of the iron "heads," forms a semicircle, the centre of which, during the trawling process, is from half to two-thirds the way from the mouth of the net. All round the concavity of the semicircle is the ground-rope, sometimes weighted with metal, and sometimes consisting of a chain covered round with roping; and this, dragging along the ground, disturbs the flat-fish, which rising up find the upper part of the net above them, and gradually get swept into the lower part. This lower part terminates in what is called the "cod," or "cod-end," the extremity of which is from 4 to 6 feet broad, and forms the end of the V. It is into this that the fish get, and their escape from it is prevented by fresh incomers, and weeds and rubbish pressing against those already in it, while those which make a dash backwards to escape, generally find themselves in the inverted "pockets" at each side of the net, which open about 12 feet from the end of the "cod" and form *cul de sacs*.

Many objections have of late years been urged against trawling, but it may be premised that no very great restrictions are likely to be imposed upon this method of fishing, which has been developed to such an enormous extent during the last twenty years or more, and has become one of the most important of our industries. Of course if it could be clearly shown that the present method of trawling really threatened a very proximate depletion of the sea of some one particularly valuable species of fish, the matter would assume a different aspect, and the Legislature could easily be induced to intervene, and, so to speak, protect posterity. But this danger of depletion has not been proved, and the evidence collected of recent years by inspectors of fisheries, commissions, and independent persons, who have the character, more or less, of being "experts," tends decidedly in a contrary direction. It has been most clearly demonstrated that the spawn of the great majority of fish is emitted at the surface of the water, and there vivifies; and hence the allegation so often made that the trawl-nets destroyed a very large quantity of fish spawn at the bottom of the sea has but very little foundation. Indeed, it may be argued in favour of the action of the trawl-net on the bottom of the sea, that it does a positive good, by destroying large quantities of the eggs of some species of dog-fish, which are viviparous, as it passes over the marine vegetation

to which these eggs cling. The allegation that the trawl, as it is dragged over the ground, creates a disturbance that frightens fish away, may be taken for what it is worth. As a matter of fact, the trawl travels through the water very lightly, creating hardly any disturbance at all in proportion to its size. Anyone can satisfy himself of this who will handle the rope or trawl-warp, as he will find how easily and with how much elasticity the net follows the vessel's course. After all, however, the real answer to the complaint that the trawlers frighten fish away, is to be found in the fact that year after year, from the very same fishing-grounds which have been harried for generations, our trawlers bring home an increasing quantity of fish. The damage done by trawlers to the drift-nets and lines of other classes of fishermen is a question of a different kind; and it may be hoped that the International Convention at the Hague last year, and the passing of the Sea Fisheries Bill, and the appointment a few months ago of another Commission to inquire into this matter, will result in a diminution of the evils complained of.

But, notwithstanding the exaggerated, and in some instances, groundless objections to trawling, there is no denying the fact that the use of trawl-nets, as at present generally constructed, is destructive of enormous quantities of what are called "immature" fish, and especially of soles. Small soles, known in the trade as "slips" and "tongues," are not, indeed, immature in the strict sense of the word, any more than lamb or veal are immature, as, from a gastronomic point of view, small soles are of a sweeter and finer flavour than large ones; but they are "immature" in consideration of the fact that within a few weeks, or at most months, they would grow into fair-sized fish. Now, setting aside these "slips," the number of still smaller soles and fry of other fish which are annually destroyed through trawling, is almost beyond conception. However illimitable in a sense may be the supply of certain fish in the sea, that supply would necessarily be greater, if only a part of the myriads of immature fish, now destroyed in the "cod" ends of the trawling-nets, were saved. With a view to effect this, several suggestions have been made as to the improved construction of the "cod" ends, and some of them were illustrated by exhibits at South Kensington. For instance, there was the patented trawl with a circular "cod" end, shown by Mr. George Read, of Byron House, St. Patrick's-road, Deal. The "cod" is formed of square meshes, which do not close like diamond meshes when a strain is put

upon them, and it is kept distended by wooden hoops. Thus immature fish, and a large proportion of the rubbish gathered from the bottom of the sea, can pass through the openings. It can be fitted to any ordinary trawl-net. Mr. C. G. von Schrieber, of Lowestoft, exhibited an improved trawl with round or oval holes at intervals in the "cod," and for the escape of immature fish. These escape holes are made of a material as soft and pliable as indiarubber, and are from 12 to 18 inches apart from each other. Another exhibitor of an improved trawl-net was Mr. E. W. Morris, of Lowestoft; the end of whose cod-net is distended by hoops, and composed of circular metal rings looped together for the escape of small fish and rubbish. It would seem that the adoption, in some way or other, of this principle would go a long way towards solving the question of the escape of immature fish.

A great variety of other nets used by British fishermen were illustrated at the Exhibition. Next to trawl-nets, those termed Drift-nets are of most importance, being chiefly used in our herring, mackerel, and pilchard fisheries. The meshes in a drift-net vary according to the fish expected to be captured. These are caught by their heads passing through the meshes, which afterwards slip under their gill-covers when they open them to breathe. The drift-nets are made in "pieces" of 60 yards long, and about 9 yards deep, and each net is 30 yards long. When fastened together, end to end, they are called a "train," "fleet," or "drift" of nets, and extend considerably over a mile in length. It has been calculated that there are often 10,000 miles of nets at work in the North Sea at one time. The nets form a perpendicular wall of meshwork, which is partly supported by corks along the rope on the top edge. But as it is found that the fish sometimes swim lower than at other times, the nets, which are heavy enough to sink even with the corks attached, are further buoyed up by small kegs, called "bowls," one of which is attached by a rope to each piece of net. By means of the ropes the nets can be let down some fathoms, or held up near the surface. The "warp" is another rope to which each net is made fast by two small ropes called "seizings," and by this the hauling in of the nets is facilitated. The fishing is always carried on at night, and hence it often happens that the nets are interfered with by passing vessels or trawlers. The nets are shot about sunset, great care being taken in this operation that they fall in the right position, and that the "seizings"

are made fast to the warp at their proper intervals. The length of the warp is then arranged so that there is a sufficient strain on the nets to keep them fairly straight, according to the state of the tide, wind, and weather. The boat's head is brought round to the wind, the foremast lowered, the sails taken in except a small mizen sail, the regulation lights are set to show that the boat is fishing, and the "drifting" proceeds. When there are sufficient indications that the time has come the hauling in commences, the aid of the "capstan" is brought in, and all the crew are very busy, each hand having his allotted place, like men-of-war's men at the moment of action. Like most other fisheries, the herring fishery is much of a lottery, a single boat sometimes taking more than a small fleet of others in proximity to it. In recent years single boats from Yarmouth have taken 126, 137, 138, and 142 "lasts" of fish. A Yarmouth last of herrings is supposed to count 13,200 fish. Sometimes boats at times catch more than they can carry, and instances are on record of such numbers of fish "striking" the nets that the warp ropes have broken, and fish and gear have all been lost; as happened a few months ago on the west coast of Scotland.

Seine-nets are also important "engines" used by our fishermen. They are the oldest kinds of nets in the world, and probably those generally alluded to in the Scriptures. The ordinary seine, as it is worked from a boat, is shot in a circle, and the ground seine in a semicircle from the shore. Some seines are 100 to 300 fathoms in length, and 10 to 15 fathoms in depth, and are used for the capture of pilchards, herrings, mackerel, smelts, grey mullet, and indeed any fish which is either more or less a surface swimmer or hangs to the shore. The difference between the various kinds of seines relates almost entirely to the manner in which they are worked; but they have all the character in common of surrounding or enclosing the fish. The back or upper edge is supp rted at the surface by corks, and the foot is weighted with lead, so that the whole wall of netting hangs perpendicularly. Seines are much used for mackerel fishing in the West of England. Like the herring fishing this is uncertain work. Sometimes immense hauls are made, a single cast of the net occasionally, in the early part of the season, realising as much as 100*l*. Seine-fishing is carried on in Cornwall on a much larger scale than elsewhere. St. Ives has long been famous for its pilchard fishing, which is conducted with seines as well as with drift-nets. Between 200 and 300 seines are always

kept ready for work. Sometimes two or three nets are used for enclosing a large shoal of fish. The first or principal net is about 200 fathoms long and 10 fathoms deep in the centre, and another net is fastened to it called the "stop-seine." These nets are shot at the same time, the boats starting from the point where they are joined, and ultimately bringing together the two ends, and thus encircling the fish. The circle is then gradually contracted by hauling up the stop-seine till the whole of the fish are inclosed in the large seine alone. Sometimes if the number of fish is likely to be very large, a second stop-seine is brought into requisition. When the fish are finally enclosed in the one seine, the net is gradually towed towards the shore to some quiet spot, where it is moored, when the foot touches the bottom. It may then take several days to empty the net if the haul be a very large one. The ground seine is that used from the shore. It has a rope attached to each end of it, one of which is left in charge of some of the fishermen on the beach. The boat begins shooting the net a little way from the land, and rows round in a semicircle to the shore again and lands the other rope. Then all hands join in the hauling in, one half of the party at one rope, the other half at the other, and as these are hauled in, the hauling parties gradually approach each other till they meet. By this time the net is nearly on shore, and the fish are mainly collected in the centre. The last operation is to get the foot of the net well under the fish and haul them bodily out in the net, which assumes finally something of the form of a net hammock. Sometimes when the take is a large one, the fish are partly dipped out in baskets. It is this kind of seine fishing which so often affords amusement for visitors at some of our watering places, especially on the south coast. All kinds of fish are caught in these ground-seines; but, of course, it is only on sloping shores with a smooth bottom that the use of these nets is practicable.

The Trammel is a "set-net," let down to the bottom of the sea, and there fixed by "anchors" and supported perpendicularly by "buoys" in a straight line. The sizes of the meshes vary according to the fish fished for. Large quantities of hake are taken in this kind of net in some Irish fishing districts, and cod, herrings, and even turbot are among the victims to it. But the true trammel is composed of three nets or distinct sets of meshes, and hence its name in French, *tremail* or *tramail*, *i.e.*, *trois mailles*, or "three meshes." It is a combination of three long

nets placed side by side, and fastened together at the back, foot, and ends. Each of the outer nets (or "wallings") has a depth of five meshes, 10 inches square, and is 40 or 50 fathoms long. These two wallings are mounted so that the meshes of both exactly correspond in position, and a fish might pass through them as if they were a single net. The third net, however, is placed between the other two, and has its meshes only 2 inches square; but it is both twice as long and deep as the outer ones, the excess being gathered in at short intervals along the edges where the three nets are united. Thus the trammel is a kind of trap, the fish as they "strike" on either side carrying a portion of the slack net between the larger meshes or wallings, and so making, as it were, pockets for themselves, and becoming hopelessly "trammelled." It is in this kind of net that the large red mullet, so dear to epicures, are taken round Guernsey; and it is in use in certain parts of the Devonshire and Cornish coasts.

The Kettle-net is mainly used for catching mackerel when they come near the land in some districts along the Kent and Sussex coasts. It is an arrangement of stakes and nets so constructed as to lead the fish into an enclosure whence practically there is no escape. The first portion of the kettle-net construction consists of a circle of stakes, from 100 to 200 yards in circumference, 10 to 12 feet high, and 8 to 10 yards apart, with netting stretched all round them from their tops to the ground. This forms the "pound" constructed just below low-water mark at neap-tide, with its entrance on the land side, about 30 to 40 yards wide. The other part of the construction consists of a barrier of stakes and netting in a straight line from high-water mark to a short distance within the entrance to the pound, and this prevents the fish from passing between the pound and the shore. Kettle-nets are constructed on shores of such a slope that at high water the pound and the greater part of the barrier are covered by the water. When once the fish have been led to enter the pound, it is seldom that they find their way out again through the comparatively narrow entrance, and, as the tide falls and the greater part of the pound becomes dry, they are hopeless captives in the small portion of the water remaining. This kettle-net fishing is discouraged by the Board of Trade, as the stakes impede navigation, and prevent the more effectual use of seines where they are fixed: and, after all, it is but an idle kind of fishing.

Mention may also be made of what is called the Stow-net, which is almost exclusively used for the capture of sprats in certain districts, especially at the mouth of the Thames and in the Lincolnshire Wash. It is in the form of a long, narrow funnel, 50 to 60 yards in length, with a mouth about 30 feet high and 20 broad. It tapers for a length of 90 feet to a diameter of 5 or 6 feet, and so forms a gigantic bag-net. It is divided into several parts, the first being called the "quarters" forming the sides of the mouth, and the next is termed the "enter," and forms the last part of the most funnel-shaped portion of the net. When the net is to be used, two wooden spars or "balks" are fastened to its mouth—one at the top and the other at the bottom—to keep it open, the lower one being weighted. Four ropes leading from the four corners of the mouth of the net are joined to another rope, the end of which is fastened to the anchor of the fishing-vessel, and thus, if the anchor drags, the net maintains its same relative position to the vessel. The net is generally set at the beginning of the tide, and remains down till it is nearly done. Before hauling it up, the mouth is closed by means of a chain fastened to the middle of the lower balk, and passing through an iron loop in the upper one. By heaving this chain over a small davit at the bow of the vessel, the two balks are brought together, and the closed mouth of the net raised to the surface of the water. The rest of the net is then gradually got on board, and the fish measured out from the "cod" or end into the hold. It is with a certain kind of stow-net, worked on the same principle as that just described, that the famous "whitebait" of the Thames are captured. That these delicious little fish are mainly the "fry" of the herring seems now generally acknowledged; but why this fry is almost exclusively got in the Thames is still a great puzzle to ichthyologists.

The chief net used for catching shrimps in the Thames is to all intents and purposes a small beam-trawl net, with a second beam below instead of a "ground-rope" as in ordinary trawls. The head-quarters of the shrimp fishery of the Thames are at Leigh, a few miles west of Southend, on the Essex coast, from which hails quite a fleet of small decked smacks employed in this particular industry. That it is an important one may be judged from the fact that between 2,000 and 3,000 gallons of the "brown," or true shrimp, are sometimes sent to London from Leigh in one day.

Fish capture by means of hooks and lines was probably in

vogue in the ancient world long before the use of nets. There are two kinds of line-fishing (as we will call it for shortness sake) practised by our fishermen—the one with what are termed "hand-lines," *i.e.*, lines held in the hand of the individual fisherman who uses them; and the other, with what are termed "long lines," which are shot out of a vessel or boat, and then hauled in when they have been a certain time in the water. The former are used, more or less, all round our coasts, and generally within a moderate distance from the shore, and with them most of our whiting are taken in the channel towards the west, and a variety of other small fish; but the latter are employed further from the shore, and principally on the famous fishing-grounds in the North Sea for the capture of cod, though haddock, ling, halibut, and sometimes turbot, skate, and other ground fish are taken on them. Cod are also taken by hand-lines from about ten to twenty miles from our eastern coasts, when they come closer to shore in pursuit of their favourite food, the herring. The hand-line used in this kind of fishery is 45 fathoms long, with a leaden "sinker" of about 6 lbs. weight at the end of it. A stout iron wire, called the "sprawl-wire," is fixed to the top of the lead at right angles, and to each end of it is fastened a "snood" of thinner line with hook attached. The vessel is hove to when the fishing is going on, and each member of the crew works a line, regulating its distance from the ground as he judges best. The long line is known by a variety of names, according to the locality in which it is used and its size—for instance, spiller, spilliard, bolter, and trot. A "set" of long-lines as used on board a large smack consists of about fifteen dozen, or 180, lines, each 40 fathoms long, with twenty-six hooks on "snoods" at intervals of a fathom and a half all along the main line. A "string" of this description carries more than 4,500 hooks, and when laid stretches about eight miles. The line is always laid across the tide, and is paid out as the smack progresses under easy sail, small "anchors" being attached to it at every 40 fathoms to keep it steady. The position at each end, and at every mile along its course is marked by a conical-hooped buoy ("dan") which has a pole passing through it, with a small flag at the top. After remaining down till the tide has nearly finished, the hauling-up commences, the smack sailing as near as she can along the course of the line indicated by the "dans," but making short tacks if necessary. Sometimes if the

wind is very light, the line is taken up by the smack's big boat. As the line comes on board and the fish are taken off, it is carefully coiled on a series of trays or flat baskets, ready for the hooks to be rebaited. The baiting of the hooks has to be carefully done, and each has to be kept clear of the line, so that no entanglement may take place as the line is being paid out.

As cod taken by line-fishing command a high price in the market, it is a great object to keep them alive as long as possible. For this purpose the smacks used in this kind of fishing are constructed with wells, which form an actual part of the vessel, holes perforated in her sides allowing the water to pass right through her. These "welled smacks" are said to have been first built in this country at Harwich in the year 1712, though the idea was probably of Danish origin. A large number of the cod die in the wells, from which they are immediately taken, and kept in ice till the vessel comes home to discharge her catch. Ten days' line-fishing on the Doggerbank will sometimes yield twenty or more score of live cod, and two-thirds of that number in ice. At Grimsby, in the docks, the live cod when taken out of the wells of the smacks are put into wooden boxes or chests, of 7 feet long, 4 wide, and 2 deep, each of which holds from 40 to 100 fish, according to size. The fish will live in them a fortnight in the Grimsby "fish dock." They are taken out and killed by a blow on the head, as they are wanted for the London and other markets, to which they are taken by rail. They are known in "the trade" by the name of "live" cod. There are sometimes as many as 400 chests of live cod in the Grimsby fish dock, containing from 10,000 to 20,000 fish. At Harwich, also, cod are stored in a similar manner, the fish being brought there by smacks hailing from various ports.

The foregoing methods of sea fishing were amply illustrated at the Exhibition, and a variety of improvements in them suggested. The Exhibition also has brought forth an abundant mass of literature connected with sea fishing in the Essays which were sent in for prizes, and the various Handbooks and Conference papers published by the executive committee under the able editorship of Mr. A. J. R. Trendell, the Literary Superintendent. Altogether there is every reason to believe that the practical outcome of the South Kensington enterprise will be an improvement in our methods of fishing, an increased and cheaper supply of fish, and at the same time greater prosperity both for capitalists and the working hands in our fisheries industry.

J. J. Manley.

FACTS AND FANCIES OF LONGEVITY.

THE census of 1881 recorded the existence of 141 persons who were said to be over 100 years of age. The newspaper reader is tolerably familiar with the appearance of paragraphs about centenarians. Sometimes a kindly clergyman appeals for some help to smooth the last days of one for whom a century of toil has not provided a competence; at others the enthusiastic fellow townsfolk organize a public celebration in honour of one who has eluded death so much more successfully than the bulk of his fellows. On one occasion the parish officer of Chelsea devised an unusual method, for on what was understood to be the hundredth anniversary of Mrs. Hogg's birth he had her sent up in a balloon! Haller collected a thousand cases of longevity, that is, of persons who were believed to have lived between 100 and 150 years. Such statements abound not only in the popular literature of every land, but have, until very recently, been accepted even by medical writers, with but few expressions of doubt. Sir Henry Holland thought there was "sufficient proof" of the occasional prolongation of life to 110, 130, and even 140 years, and was not inclined to reject the claims of Thomas Parr to be considered 152 at the time of his death, and the validity of the claim was admitted also by Flourens.

In our own days a new school of thought has arisen, and their abours have given a fresh aspect to the question. The late Sir Charles Wentworth Dilke, Sir George Cornewall Lewis, and more especially their friend and disciple, Mr. W. J. Thoms, have altered the scientific if not the popular view of the subject by the simple process of demanding that satisfactory evidence shall in each case be adduced before centenarian claims are admitted. When this touchstone is judicially applied some of the very old old people are seen to be conscious impostors, whilst others, in the senile decay of memory, have begun by adopting the suggestions of those around them as to their great age, and have ended by a firm belief in their truth. "Even as many old men," says Fuller, "used to set the clock of their age too fast when once past seventy, and, growing ten years in a twelvemonth, are presently fourscore; yea, within a year or two after climb up to a hundred." It is a remarkable commentary upon this tendency to exaggerate age that alleged centenarians abound most in those

classes where there is least possibility of documentary disproof. If a superannuated mendicant in a workhouse claims to be a hundred years old, the only positive evidence against his assertion may be its inherent improbability, but in the higher ranks such a statement could be easily tested by reference to the Peerages and other "red books." Thus Sir George Cornewall Lewis points out that in the Christian era "no person of royal or noble rank mentioned in history, whose birth was recorded at the time of its occurrence, reached the age of a hundred years." "I am not aware," he continues, "that the modern peerage and baronetage books contain any such case resting upon authentic evidence." This is all the more notable from the well-known fact that the average mean duration of life is greater in the peerage than in the general population. It is true that Sir Richard Baker asserts that the Earl of Winchester, who died in 1572, was 106, but Camden is content with the more moderate estimate of 97. Lady Mary Bouldby, said to have been 106, is by more reliable annalists set down at 97.

It must not be supposed that any one doubts the possibility of men and women attaining to one hundred years. Neither Mr. Thoms nor any of his followers have made any such assertion. Their contention is that such cases are very rare, and that they are to be examined by the ordinary rules of evidence, and to be accepted or rejected according to the nature of the testimony adduced. In 1790 a young lady of nineteen, Catharine, daughter of Sir John Eden, was selected as one of the Government nominees in the Tontine, and she died in 1872, having more than completed 101 years. These nominees were selected from the aristocracy and the well-to-do classes on account of the ease of keeping them in view in after years. The officials of the National Debt Office also convinced themselves as to the case of David Rennie, a farmer of Dundee, who was born February 28, 1755, and died March 2, 1857. The experience of assurance offices is instructive, for their clients might have been expected to furnish some authentic cases, if centenarians were as common as the general public imagine. In 1872 Mr. A. H. Bailey stated that in the entire experience of life insurance companies, extending from the reign of Queen Anne to the present day, there was but one case of a centenarian—Mr. Jacob Luning. One person had died in the 103rd and three in the 99th year of their age.

Very frequently when the statements as to centenarians are examined, they are seen to be devoid of evidence or based on

misapprehension. Miss Mary Billinge, of Liverpool, was said to have attained 112 years. She was born, it was said, at Eccleston, near Prescot, May 24, 1751, and died December 20, 1863. When Sir James A. Picton investigated the case, it was seen to be one of mistaken identity, for the Mary Billinge who died in 1863 was not the Mary who was born in 1751, but was of quite different parents, and did not see the light until 1772. Hence even parish registers, unless carefully scrutinised, may deceive. Another possible source of error is that parents who have lost a child frequently give the same name to another born subsequently. Mr. Thoms mentions a distinguished R.A. who was the third son to whom the name he bore had been given.

"The system of registration of births," observes Professor Owen, "now affords the competent searcher after truth the needful data. Parish registers cover a greater period of time, but both have their sources of fallacy, needing caution. In the case, let us say, of Richard Roe, reported now living at St. Hilda's, Northshire, at the extraordinary age of 120, one writes to the incumbent, respectfully requesting that a search may be made in the vestry for any evidence of said Richard's birth. An answer is duly received that Richard Roe was baptised in November, 1751. This seems straightforward and satisfactory. But the worthy incumbent is again troubled with the request that the parish register may be further searched for the birth or baptism of any other Richard Roe at a later period, and for the entry of the marriage, if perchance such may have occurred in the place of the birth of the Richard Roe of 1751, and of that of any subsequent Richard Roe. It turns out that the Richard Roe of 1751 married early, viz., in 1769, one Margaret or Margery Doe, of the same parish, and that their eldest born was christened Richard Roe in 1771. Now this Richard Roe, it further appears, wedded at St. Hilda's Elizabeth Bunch, of the same parish; and surviving Bunches know well that such was the name, and not Doe, of the first wife of the wonderful old man, whereupon it appears that the Richard Roe in question has reached his 100th, not his 120th year." If documentary evidence can sometimes deceive, still less reliance is to be placed on tombstone inscriptions. "To lie like an epitaph" is a proverbial appreciation of graveyard literature, but in many cases it is not at all necessary to assume intentional deception. At Bickenhill, in Warwickshire, an inscription asserts of Miss Ann Smith that she "died a maid and deceased aged 708." This

may be the stone-cutter's notation for 78, or some jocular person may have put the 8 as an afterthought to the genuine record. At Brislington, near Bristol, during some repairs a stone was found inscribed "1542. Thomas Norman, aged 153," and the parish authorities had it new faced, repaired, and put in a place of honour; nor did they learn until too late that a wicked wag had inserted the figure 1, and thus given the appearance of patriarchal age to one who died in middle life. The monument of Macklin, the actor, in St. Paul's, Covent Garden, states him to have been 107, but when his coffin, many years after, was brought to light during some alterations, his age, as given on the plate, was seen to be ninety-seven.

Sometimes the generations descended from a person are adduced as proof of centenarian claims, but this is quite inconsequential in the absence of other proof, for it is quite *possible*, though of course very improbable, for a woman to be a mother at eighteen, grandmother at thirty-six, and a great-great-great-grandmother at ninety.

Another source of evidence is the centenarian remembrance of events that happened long ago, but this opens up the question as to the period when memory begins to exercise her functions, and there is some testimony that it may begin at a very early age. Mr. Thomas Cooper, the author of the "Purgatory of Suicides," says that he remembers circumstances that occurred on his second birthday, when he fell into the river, and was rescued from drowning. It must also be borne in mind that there is a tendency to confuse that which has been a matter of personal experience with the impressions derived from conversation and hearsay. This must throw a certain amount of doubt on those who have no documentary evidence for their alleged great age, but calculate it from some historic or notable circumstance that happened in their infancy or childhood.

There are some supposed instances of extreme longevity that are constantly cited as conclusive. Why should we doubt that Catharine Prescot, of Manchester, learned to read when she was over a hundred, and died at the age of 108, when Old Parr died at 152 and Jenkins at 169? Mr. Thoms has carefully examined these typical cases. Henry Jenkins died in 1670 at Ellerton-on-Swale, and the parish register merely states that he was "a very old man," and of that there will be no question. Mr. William Grainge says that "the proofs on which the great age of Jenkins rest have been examined with the greatest

severity and care, in order, if possible, to detect the slightest fallacy, but the fact appears to be established beyond reach of reasonable doubt." In fact, Mr. Thoms, in 1870, was the first to utter a historic doubt about the Yorkshire beggarman, and to show that there is really no reason beyond his own unsupported assertion to suppose him to have attained an age so patriarchal. About 1662 or 1663 he told Miss Anne Savile that he was then about 162 or 163, and could "remember Henry VIII and the battle of Flodden; that the King was not there, as he was in France, and that the Earl of Surrey commanded." "Being asked how old he was then he said 'I believe I might be between ten and twelve, for,' says he, 'I was sent to North Allerton with a horseload of arrows, but they sent a bigger boy from thence to the army with them.'" He further said that he had been butler to Lord Conyers, and remembered the Abbot of Fountain Abbey very well, "who used to drink a glass with his lord very heartily." Dr. Tancred Robinson adds that Jenkins in the latter part of his life was a fisherman, and used to wade in the stream, his diet was coarse, he was often at the York assizes, and had sworn to 140 years of memory. In 1667 he was a witness in a tithe case, and then gave his age as 157, so that instead of gaining in years he had been growing younger since his interview with Miss Savile, and in his deposition, so far from swearing to 140 years, he was content to say that his knowledge of the matter in dispute extended to "above threescore years," as might very well be the case. Thus the only evidences of the age of Jenkins are his own unsupported and varying declarations. The case of Thomas Parr has acquired still greater celebrity. He is said to have been born in 1483, at Winnington in Alberbury, and in the year 1635 was seen by the Earl of Arundel, who had him conveyed in a litter to London to be presented to the King. He died in the metropolis November 15, and a post-mortem examination of the body was made by the famous Harvey, and his gravestone may still be seen in the south transept of Westminster Abbey. John Taylor, the water-poet, wrote an account of "The Old, Old, very Old Man," which has often been reprinted. He is said to have been born in 1483, to have been in service from 1500 to 1518, when he entered upon four years' possession of his father's lease, which was renewed to him in 1522 and again in 1543. In 1563, at the age of eighty, he married his first wife, and in 1564 obtained a renewal of his lease, and again in 1585. In 1588 he

stood in a white sheet in Alberbury church for incontinence. In 1595 his first wife died, and ten years later he married a widow. There is not the slightest documentary evidence for any one of the statements as to Parr, about whom the only facts known with certainty are that he was brought before the King as a very old man, and died in 1670. There is, indeed, additional proof that he told the King of the discreditable episode in his life which brought upon him public disgrace in the parish church. The King said to Old Parr, "You have lived longer than other men, what have you done more than other men?" "I did penance when I was a hundred years old." This is not easily reconciled either to probability or to the other statements as to his career. For the pretended descendants of Parr there is no evidence at all, though physiologist and divine have both quoted the apocryphal son aged 113, one grandson aged 109, and another 127, great-grandson aged 124, great-great-granddaughter aged 103. These are all as mythical as the phœnix. More stress has been laid upon Harvey's autopsy than the facts warrant. The famous physician had brought to him the body of the "poor countryman," and naturally repeated such statements as to the condition of life of the deceased as were made by those who asked him to make the examination. What he says as to the physical condition of the body is carefully written, but the rest is clearly hearsay and gossip. Another famous centenarian is the Old Countess of Desmond, of whom there is a portrait at Muckross with the following inscription: "Catherine, Countess of Desmond, as she appeared at y^e^ Court of Our Sovraigne Lord King James, in thys present year A.D. 1614, and in the 140th yeare of her age. Thither she came from Bristol to seek Relief, y^e^ House of Desmonde having been ruined by the Attainder. She was married in y^e^ Reigne of King Edward IV, and in y^e^ course of her long Pilgrimage renewed her teeth twice. Her principal residence is Inchiquin in Munster, whither she undauntedlye proposeth (her purpose accomplished) incontinentlie to return. Laus Deo." Sir Walter Raleigh mentions seeing her in 1589, and states that she was married in the reign of Edward IV. Fynes Morison states, in addition, that she was able to go on foot four or five miles to the market town, even in her latest years. Horace Walpole says she danced with Richard III. Now, in 1528, forty-five years after the death of Edward IV, the first wife of Katherine Fitzgerald's future husband was still alive. Probably Sir Thomas married her in the following year,

when he became Earl of Desmond, and she became the mother of a daughter, who afterwards married Philip Barry Oge. If Katherine Fitzgerald was 140 in 1614 she must have been born in 1464, and would therefore be sixty-six when her daughter was born! Further than this, the pedigree states that she died not in 1614 but in 1604, and the only mention of her supposed visit to England is in this erroneous inscription. The annalists and pamphleteers would not have left unchronicled so remarkable a person. The probability is that she was a young woman at the time of her marriage, and as her husband died in 1534 she would naturally be known as the Old Countess when seen fifty-five years later by Raleigh. If she were twenty at the time of her marriage she would be ninety-five at her death. In any case her age is far more likely to have been 100 or under rather than 140.

It is not possible in relation to bygone ages to do more than indicate circumstances of doubt, as the data for an exhaustive examination are no longer forthcoming. Most persons interested in the subject have notes of some hundreds of supposed centenarians of the past about whom it would be hopeless to attempt to prove a negative. We can only apply the reasoning suggested by the circumstance that most of the cases now brought forward prove when investigated to be mistakes or deceptions. Joseph Miller, who died in Morpeth workhouse 25th April, 1872, was believed to be 111 years old. During his latter years he received much extra consideration on this account. "This old man," said one writer, "fought under the gallant Nelson, and, like all old tars, his greatest glory is in repeating the deeds of the bold and the brave. How, when the 'Pomona' frigate was once lying off Boulogne, a live shell was thrown on deck, which he fearlessly grasped and pitched overboard; how he narrowly escaped kingdom-come seventy or eighty years ago; how he laughed when his enemies went by the board; how that his father lived to the age of 119, his sister to 120, and that he hopes to do the same, with an endless variety of characteristic yarns which would lose their pungency by repetition. About twelve months ago he 'astonished' the officers and captain of the gunboat 'Castor' by the agility with which he paced the deck, scanned the rigging, and dived into the cabins." It was said that he was baptised at Whickham, and a certificate was obtained showing that Joshua, the son of Robert Miller and Ann his wife, was baptised there 25th October, 1761. Although the old man said that his mother's

name was Thomasina, that clue was not followed up until after his death, when it was found that he was not born until 1783. He entered the navy in 1805, and retired from it in November of the same year. Thus he was really about ninety when he died.

Thomas Geeran's was a case of wilful imposture. He claimed to have been born May 14, 1766, at Scarriff, in the county of Clare, Ireland, and after working as a sawyer enlisted in the 71st Regiment, was at the siege of Seringapatam, was in the Walcheren Expedition, fought in nearly every battle in the Peninsula, and concluded his military career at Waterloo, receiving his discharge in 1819. In his later years he lived upon the contributions of the charitable, and died in the infirmary of the Brighton Union at the advanced age of 105 years. Mr. Thoms's incredulity was the object of much ridicule from medical and other persons, but it was amply justified, for official inquiry showed that Geeran's name was not on the rolls of the regiment to which he alleged he belonged from 1796 to 1819. There was, however, one Michael Gearyn or Gayran who enlisted 3rd March, 1813, and deserted 10th April, 1813, and this was in all probability the "old soldier" who afterwards gave the rein to his imagination and described the 71st Regiment as being in India and Egypt when it was in England, and said that he was wounded at Salamanca when the regiment did not take any part in that action. He was about eighty-three at his death, and must often have laughed at the credulity of those who swallowed so readily his contradictory statements. The announcement that a man 108 years of age would preach must often have attracted large congregations to hear "the Venerable George Fletcher," who claimed to have fought at Bunker's Hill, to have been with Abercrombie in Egypt, and in military and other active pursuits to have spent eighty-three years of his life. In reality he was about ninety-two at the time of death. He enlisted in 1785 and deserted in 1792, but was allowed to re-enter under the terms of a Royal proclamation in 1793, and managed to fraudulently add seven years to his claim of previous service, and when he received his discharge in 1803 he made a further addition to his years, and represented himself as forty-nine when he was in reality only thirty-seven. The reason for the deception is obvious. "Fletcher was shrewd enough to know that a man of thirty-seven years of age could not receive credit for twenty-four years and six months' service, as much of that must have

been before he was eighteen, and was consequently not entitled to reckon for pension." Edward Couch, who died 30th January, 1871, was believed to be 110, and claimed to have been one of the crew of the "Victory" at Trafalgar, and to have fought under Lord Howe on the glorious 1st of June, 1794. In reality he was born in 1776, he did not enter the Navy until June 30, 1794, and his name is not to be found on the books of the "Victory!" "Captain" Lahrbush, whose birthday was annually celebrated at New York, made the most absurd misstatements, and claimed to have had twenty-nine years' service in the British Army, when in reality he entered it in 1809, and was cashiered in 1819. In the same way he added to his age, and distinguished American soldiers and others joined in celebrating the 107th anniversary of a man who in all probability was eighty-seven. The story of Richard Purser, "the oldest man in England," who died in 1868 at the reputed age of 112, was marked by such circumstances of doubt as not only to justify, but to demand scepticism.

So far the evidence cited will convince any reasonable mind that claims of extreme longevity are often made, sometimes with the deliberate intention to deceive and at others in unconscious error, but that few cases can be satisfactorily established. The duty of proof rests on those who make such statements, but they too often appear to think that their assumptions should be regarded as evidence. A person claiming to be 100 should be expected to support his statement by such reasonable evidence as would satisfy a jury in a claim of any other description. The facility with which such statements are accepted is a premium on carelessness and deception. It would be pushing scepticism too far to insist that no centenarians exist. This is a heresy that Mr. Thoms never broached. On the contrary he recorded several cases where the evidence is satisfactory. Jane, daughter of Francis Chassereau, a French refugee, was born in London, November 13, 1739, and married in 1764 to Mr. Robert Williams, of Moor Park, Herts, and Bridehead, Dorset, where she died October 8, 1841, at the age of 102 years. Her eldest son stated that he had dined with his mother on Christmas Day for seventy consecutive years. She was successfully couched for cataract in the eighty-first year of her age, and when ninety held her great granddaughter at the font, and in her ninety-third year addressed her tenantry in reply to the toast of her health. She retained a good memory almost to the last but

her mental powers had otherwise weakened. Mr. William Plank was born November 7, 1767, at Wandsworth, and was for a time a schoolfellow of the late Lord Lyndhurst. He was the "father" of the Salters' Company, and died November 19, 1867, having lived one hundred years and twelve days. Mr. Jacob William Luning was born at Harvelvörden, in Hanover, May 19, 1767, married at Spalding in Lincolnshire, August 4, 1796, and in 1858, became an inmate of Morden College, Blackheath, and died there June 23, 1870. On his death the case was investigated by the Registrar-General, and it was shown that in 1796 he had insured his life at the age of thirty-six for 200*l*., and had survived that step for seventy-seven years! The evidence in Mr. Luning's case was conclusive, and equally so was that which showed that Mrs. Catharine Duncombe Shafto, of Whitworth Park, had reached the advanced age of 101 years one month and nine days. Her case has already been mentioned, but it may be added that on the day when she completed her 100th year, she appeared at the wedding breakfast of her granddaughter. A well-authenticated case is that of Frau Forstmeister Johannette Polack, born Genth. She was born June 6th, 1779, and died November 8, 1880, at Wiesbaden. Her photograph, taken on her centennial day, was shown to Professor Owen, who remarked that "it showed all the attributes of extreme old age." "I at length," he continues, "feel consolation for the disappointment in not prevailing on Lady Smith, in her 101st year to sit to Millais." Lady Smith died in February, 1877, in the 104th year of her age. Mrs. Fanny Bailey, of Worthing, was born at Ferring, August 7, 1777, and died April 6, 1881. The immediate cause of death was a fall by which she broke her thigh. She was 102 years and eight months old. Mrs. Martha Gardner, who died at 85, Grove-street, Liverpool, March 10, 1881, was 104 years and five months old. Her father had entered the ages of his children in a family Bible, and their baptisms, though performed at home, are all registered in the books of St. Peter's Church, Liverpool. She was a cousin of the Rev. John Wilson, of Trinity College, Oxford, and administered to his estate when he died in 1873. The lawyers concerned in the matter were somewhat astonished at having to deal with the letters of a lady then in her ninety-seventh year.

From this evidence we have the clear conclusion that in no case of extreme longevity subjected to critical examination has a greater age than 104 been proved. What then is to be said of

the ages assigned to the patriarchs and of the "traditions of ancient nations as the Greeks, Babylonians, Egyptians, Hindoos, and others referred to by Bishop Harold Browne ("Speaker's Commentary," vol. i, p. 62.) As to the ages of the patriarchs, Professor Erasmus Rask has suggested that the years were really months, and there is the testimony of Proclus that there was such a method of reckoning amongst the Egyptians.

The physiological aspects of longevity have been clearly explained by Professor Owen ("Fraser's Magazine," February, 1872). He points out that Buffon had said that the duration of the individual life may be measured in some degree by the period of growth. It has been suggested that the period at which the epiphyses of the long bones coalesce with the diaphyses is that at which the growth of the animal is complete. This completion of the process of ossification, together with that of dentition, enables a calculation to be made of the full period of human life. Man has but two sets of teeth, and the second set, says Professor Owen, "may do their work under favourable circumstances, for thirty or forty years before being worn out and shed." The oldest human remains known exhibit the same characteristics as those of the present day. Professor Owen tells an anecdote which explains how old people are sometimes said to cut a third set of teeth. He was taken to see an old woman of a hundred who was cutting a fresh tooth. She "pulled down a skinny lip and showed a lower jaw toothless save for one black stump, of which the crown had long before been broken away, probably after decay. At fifty the gum had closed over the fang of the decayed and broken-off crown. The absorption which reduces the vertical extent of the jaw by reducing the alveolar part touched not the retained fang, and spared in part its particular socket, when the tooth stump protruded through the subsiding gum." The physiological view is thus summed up by Professor Owen: "The conclusions of Professor Flourens, that, in the absence of all causes of disease, and under all conditions favourable to health and life, man might survive as long after the procreative period—ending say at seventy in the male—as he had lived to acquire maturity and completion of ossification—say thirty years—are not unphysiological. Only under the circumstances under which the battle of life is fought, the possible term of one hundred years inferred by Flourens, as by Buffon, is the rare exception." The causes of this would open out a fresh field of inquiry, and, however tempting the subject, we must refrain.

The truth remains, that, as Flourens puts it, most men die of disease, and but few of old age. Why should this be? But even a good constitution and healthy and careful habits of life cannot prolong existence to an indefinite term. The revolutions of the seasons are not more certain than the processes of growth, activity, and decay that every human organism must pass through. "The days of our age are threescore and ten" says the Psalmist, "and though men be so strong that they come to fourscore, yet is their strength then but labour and sorrow, so soon passeth it away and we are gone." This is true for the bulk of mankind, and even of the exceptional mortals we may say with the son of Sirach, "The number of a man's days are about one hundred years."

WILLIAM E. A. AXON.

NOTE.

The literature of longevity is considerable rather in quantity than quality. We may name—1. "Human Longevity," by James Easton: Salisbury, 1799. This is an uncritical record of 1712 centenarians between A.D. 66–1799. 2. "Yorkshire Longevity," by William Grainge: Pateley Bridge, 1864. 3. "On Human Longevity," by P. Flourens, translated by Charles Martel: London, 1855. This is an exceedingly suggestive work. 4. "A short Tractate on the Longevity ascribed to the Patriarchs in the book of Genesis," from the Danish of Professor Rask: London, 1863. 5. "On the Longevity of the Patriarchs," ("Fraser's Magazine," August, 1870.) 6. "On Longevity," by Professor Richard Owen (Fraser's Magazine," February, 1872). 7. "Human Longevity, its Facts and Fictions," by William J. Thoms: London, 1873. This and the same author's various articles in "Notes and Queries" are the most valuable contributions to the subject, and in conjunction with Professor Owen's physiological testimony are almost exhaustive of the question. The results are stated in the preceding article. 8. "Comparative Longevity," by E. Ray Lankester: London, 1870.

THE MIGRATION OF BIRDS.

One of the best known, and, at the same time, one of the most mysterious of natural phenomena is that known as the migration of birds. Migratory habits are not confined to the feathered tribe, but they are more notable and play a more important part in relation to birds than to the other members of the animal kingdom. Whoever lives in a country district knows, however unobservant, that at definite periods of the year certain birds make their appearance, and at another period totally disappear. Notwithstanding some exceptions the time of the arrival and departure of the migratory birds can be predicted within narrow limits. They have passed into the artificial memory of popular rhymes. Thus there is a country rhyme which, from its construction, is evidently old, and which declares—

"In April
The cuckoo shows his bill,
In May
He is singing all day,
In June
He changes his tune,
In July
He prepares to fly,
In August
Fly he must."

In Sussex they add—

"If he stay till September
'Tis as much as the oldest man can remember."

Another rhyme very current in Lancashire and Derbyshire speaks of the bird as singing for three months in the year. These would no doubt be May, June, and July. It must be remembered also that the rhymes quoted have all the appearance of being older than the change in the calendar, and hence might indicate eleven days later than they would now. The cuckoo sings not only in the day but late at night. His call has been heard at 9, 10, 11, and even up to 2 o'clock in the morning. I have heard him at Healey, Sheffield, close upon the midnight hour. On returning from the theatre we sat nightly in the garden which looked upon the hills of Derbyshire. The moon, that great artist, had effected a transformation scene that humanity could only enjoy and not describe. And in this calm but solemn landscape the only voice that alternated with the silence was the

monotonous call of the cuckoo. We were delighted to hear in those midsummer nights the song of the bird of spring, and certainly had no sympathy with a Guernsey naturalist who complained that what with the cuckoo and the nightingale it was difficult to get any sleep at all. Gilbert White gives the 28th June as the latest date on which the cuckoo was heard at Selborne, and the Rev. L. Jenyns fixes on the day preceding as that of the bird's farewell performance at Swaffham Bulbeck, in Cambridgeshire. Some notes of later appearances of the *Cuculus canorus* may be of interest.

The cuckoo has been heard as late as the last day in July in Norfolk and Suffolk. In 1850 he left Oxfordshire on the 2nd July, but in 1861 it was heard on the 7th. One was shot at Leeds 24th July, 1851. A cuckoo was shot at Thirsk 14th August, 1851, and another at Groveton, in Ireland, 22nd August, 1845. One was heard near the sea at Eastbridge 20th September, 1871. Another, a young bird, was captured at Adelaide Road 29th September, 1873. Another was shot at Sherringham, in Norfolk, on 28th September, 1877. One struck against the lantern of the North Foreland lighthouse on 17th September, 1879. It was not killed. A cuckoo was heard in Oxfordshire 23rd and 24th September, 1848. The young birds have been known in Cornwall and Oxfordshire in October. One was noticed 14th October at Worcester. These instances are mere trifles, however, beside the statement of a writer in the "Field" that he had heard the cuckoo on 1st December, 1870, at Hounslow. He heard it distinctly calling five times, and saw the bird as it flew over the garden towards Heston. If it were not for the positive assertion that he had seen the bird, it would be thought that he was deceived by some boy clever at imitating the call of the bird. To these data may be added some data of more northerly localities in 1881. It was last heard at Heeley 24th June. On 2nd July it was seen or heard at Chat Moss and Bill's-o'-Jack's; on the following day at Mossley; on the 4th and 5th at Chat Moss; on the 5th at Crosby; on the 9th at Ainsdale and Birkdale, and again at the last-named places on the 12th; on the 15th at Worsley and Accrington, and one was seen at Wardley Worsley on the last day of July. Yet we have the explicit statement of Jenner, who made the cuckoo a special object of study, that he could never see one after the 5th of July, though he conceived it possible that here and there a straggling cuckoo might be seen after that time. Notwithstanding these isolated

cases the general experience is accurately enough set forth in the rhyme we have quoted. The cuckoo is but a type of a numerous class which has been made the subject of an interesting volume by Mr. J. E. Harting, F.L.S. (London: Bickers and Son). This work entitled "Our Summer Migrants," gives an account of the migratory birds which pass the summer in the British Islands This volume contains Thomas Bewick's charming woodcuts and careful accounts of the following birds:—The Wheatear, Whinchat, Stonechat, Wood Warbler, Willow Warbler, Chiffchaff, Nightingale, Blackcap, Orphean Warbler, Garden Warbler, Common Whitethroat, Lesser Whitethroat, Redstart, Sedge Warbler, Reed Warbler, Grasshopper Warbler, Savi's Warbler, Aquatic Warbler, Marsh Warbler, Great Reed Warbler, Rufous Warbler, Pied Wagtail, White Wagtail, Grey Wagtail, Yellow Wagtail, Grey-headed Wagtail, Meadow Pipit, Rock Pipit, Tree Pipit, Water Pipit, Richard's Pipit, Tawny Pipit, Pennsylvanian Pipit, Red-throated Pipit, Spotted Flycatcher, Pied Flycatcher, Swallow, Martin, Sand Martin, Common Swift, Alpine Swift, Nightjar, Cuckoo, Wryneck, Hoopoe, Golden Oriole, Redbacked Shrike, Turtle Dove, and the Landrail or Corncrake.

The problem of the migration of birds is a fascinating one. The phenomena may be concisely stated. The birds which winter in this latitude do not breed here, and hence we may conclude that those which come to us in the spring from the sunny South do not breed there. The swallows when the sexual instinct is awaking hasten northwards, and then pair, build their nests, and bring up their young. Then when there is a prospect of a failing food supply and colder weather, they fly away, with their young ones, to warmer regions. There are two great migratory waves of bird-life—northwards in spring, southwards in autumn. The spring flight is determined by the paternal instinct, which sends the birds to the place of their own birth, there to rear a progeny and establish a home; the autumn flight is apparently occasioned by a prophetic foreboding of the hard weather and scanty fare of the English winter. The locomotive power of birds has influenced their geographical distribution in a marked degree. "Both summer and winter birds of passage," says Dr. Collingwood, "are constitutionally too delicate to flourish, or even live, as a rule, if permanently restricted to their northern summer quarters; but their power of changing them under the influence of the migration instinct increases their own sphere of enjoyment, and affords the inhabitants of these and

other more northerly climes the pleasures and benefits arising from their presence amongst us." Dr. Collingwood has suggested, though in a very cautious fashion, that the length of time a summer bird stays with us is in inverse ratio to the distance of his winter domicile. The chiffchaff remains here nearly half the year and probably winters at a comparatively short distance south of the island, whilst the swift is here only for about three months, and probably has its brumal retreat much nearer the Equator. This observation is confirmed by the similar testimony of Audubon.

As a typical instance, we may examine the particulars recorded as to the migration of the swallows, which is not only a good example, but interesting on account of the difference between the sober records of modern observation and the fanciful beliefs, now relegated to folk-lore, but formerly held by the best authorities, as to the hibernation of these birds. It was formerly thought that the swallow remained torpid during the winter. Dr. Johnson, in his fine dogmatic way, says, "Swallows certainly sleep all the winter. A number of them conglobulate together, by flying round and round, and then all in a heap throw themselves under water, and lie in the bed of a river."

The time of the swallow's arrival in this country has been variously estimated, but it is generally fixed as being about the 10th of April, although both earlier and later instances are on record.

"The gorse is yellow on the heath,
The banks with speedwell flowers are gay;
The oaks are budding, and beneath,
The hawthorn soon will bear the wreath,
The silver wreath of May.

"The welcome guest of settled spring,
The swallow, too, is come at last;
Just at sunset, when thrushes sing,
I saw her dash with rapid wing,
And hail'd her as she past.

"Come, summer visitant, attach
To my reed roof your nest of clay,
And let my ear your music catch,
Low twittering underneath the thatch,
At the gray dawn of day."

Charlotte Smith.

Sometimes the "guest of settled spring" comes earlier than usual, and instead of waiting for the "silver wreath of May," as Charlotte Smith evidently expects him to do, makes his appear-

ance amidst the winds of March. Thus in 1882 Mr. Howell Howells, of Pontcarrey, Carmarthen, wrote to the newspapers to say that on Tuesday, 21st March, between ten and twelve o'clock, he noticed the spring swallows, six in number, and at two o'clock in the afternoon of the same day, commenced the heaviest downfall of snow of the winter. This is an unusually early appearance, and it may therefore be interesting to note some of the dates recorded in spring and autumn of the appearance and disappearance of the swallows. The dates given are taken from the writings of Bewick, Gilbert White, Morris, the "Zoologist," and others. Theophrastus tells us that the bird wind blew between the 28th of February and the 12th of March, and that at the latter date the swallow appeared at Athens. They are recorded by modern observers at Rome on the 3rd of March, at Bruges 5th of April, and in Sweden about the 9th of May. The fact of the migration of the swallow was known in very ancient times, for Herodotus refers to them as wintering about the springs of the Nile. The swallow is generally expected in England about the 15th of April. They have been seen on the 1st of April at Barnsley and Lewes, 4th at Eddystone, 5th at Barnsley, 7th at Butt of Lewis, 8th at Loch Ryan, Wigtonshire, 8th at Plymouth, 11th at Barnsley, 12th at Northenden, 14th at Loch Ryan, Wigtonshire, 15th at Crumpsall, 17th at Barnsley, 17th at Hunstanton, 17th at Douglas Head, 19th at Hunstanton, 19th at Ballina, Ireland, 24th at Rhinns of Islay, 30th at Isle of May; 4th of May at East Goodwin, 9th at Teesmouth, 10th at Skerryvore, 11th, 12th, and 13th at Point of Ayr, 15th at Farne, 16th and 19th at Sumburgh Head, 22nd at Cocton, 22nd at Teesmouth, 24th at Isle of Morchan, 25th at Cocton, 26th at Kentish Knock, 29th at Sumburgh Head, 31st at Auskerry; 2nd of June at Auskerry; 9th at Leman and Ower, 14th at Isle of Morchan, 21st at Leman and Ower, 22nd at Monach Island, 23rd at Cockle, 24th at Cockle.

Birds supposed to be spring migrants have been noticed as late as the 6th of July at Southsand Head.

The ancients looked upon the swallow as the messenger of spring, but they knew that, like other heralds, his announcements were not always to be implicitly trusted. Hence arose the proverb, "One swallow does not make a summer," a saying current alike in Greece, Italy, France, Germany, Holland, Sweden, Spain, and doubtless other nations. There are some cases on record in which the birds have appeared whilst the

weather was inclement, and others in which they have been later than usual, in spite of the warmth of the spring-time. Probably something is due to the favouring gales which in some years will accelerate their flight. In this connection it is noteworthy that an ancient name for the spring winds was the Chelidonian winds, because they brought with them the swallows. Amongst the Rhodians there was a curious custom: the children went round collecting money and gifts and singing the following song:—

"The swallow is come, and with her brings
A year with plenty overflowing;
Freely its rich gifts bestowing,
The loveliest of lovely springs.
She is come, she is come
To her sunny home;
And white is her breast as a beam of light,
But her back and her wings are as black as night.
Then bring forth your store,
Bring it out to the door,
A mass of figs or a stoup of wine,
Cheese or meal, or what you will,
Whate'er it be we'll not take it ill:
Even an egg will not come amiss,
For the swallow's not nice
When she wishes to dine.
Come what shall we have? Say, what shall it be?
For we will not go,
Though time doth flee,
Till thou answerest Yes, or answerest No.
But if thou art churlish we'll break down the gate,
And thy pretty wife we'll bear away,
She is small, and of no great weight,
Open, open, then we say.
Not old men but boys are we,
And the swallows say, 'Open to me.'"

Cleobulus, the Lindian, is said by Athenæus to have been the originator of this annual ceremony at a time when there was a great want of money.

The swallow, although not so familiar with man as the robin, shows far more trust and confidence than many other birds. There are even instances of swallows being, in a certain measure, tamed. The Rev. Walter Trevelyan found one in his house at Long Witton, which had fallen down his chimney, and which the children trained to come for food when they whistled. The wild swallows of the neighbourhood endeavoured to seduce him away from the house, but in vain. He was never caged, but allowed to fly freely about the house. As he consumed from 700 to 1,000 flies a day, the task of feeding became so troublesome that he

was gradually accustomed to go outside the house in search of food. He still came inside and roosted in the children's bedchamber, but gradually became less domesticated. The inmates of the house did not encourage his evident disposition to become one of the family, for they were afraid lest he should not join the autumn migrants, and so perhaps perish in the colds of winter. Our common swallow is a permanent resident on the West Coast of Africa, and is said to dwell throughout the year in Abyssinia and Sierra Leone. It is found in Asia Minor, Japan, and in most parts of Europe, including the warmer parts of Russia, the Crimea, Denmark, Sweden, and Lapland. In Italy, France, England, and the warmer countries it is a constant and a welcome guest.

When the summer birds have arrived on the south and south-east coasts they proceed to distribute themselves over the country, and as there is a difference in south and north it may be considered that their inland distribution is effected at the rate of about thirty miles per day. Frequently the same birds return year after year to the old resting ground.

The time of the birds' departure is supposed to be early in October. Some change their quarters in August, others in the middle of September.

A pair of swallows caught in a heavy snowstorm 18th November, 1880, took refuge on the ledge of a kitchen window at Freshwater, Isle of Wight. They were young birds, and flew away very languidly. On the same day some were seen at Hunstanton, Norfolk. Sometimes after the swallows affecting a particular locality have departed a few fresh ones will make their appearance. These late swallows have been noticed in October, November, and December. Mr. Richard Brooke notices that he had seen the swift, which usually leaves about 12th or 13th August, as late as the end of August or beginning of September at Wilmslow. The chimney swallows leave about the end of September, but were seen by the same observer on the 20th October. On the 26th of September, 1832, he noticed that the swallows had apparently left the neighbourhood of Liverpool, but on 7th October, when the fall of mercury announced a coming storm, great numbers of swallows were visible. A great storm followed, and it became evident that the swallows had really started on their homeward flight, but had put back to avoid the impending tempest, which they must have foreseen on the ocean. They remained in the district until the 15th and

20th of October. This is a confirmation of Mr. Jesse's idea, that the swallows are exceedingly good weather prophets.

The following are the dates either of the disappearance of the swallows from the localities named, or the day when they were observed outward bound:—

August 15, at Coquet Island; 21, at Auskerry; September 9, 10, and 11 at North Foreland; 13, at Moston; 16, at Hunstanton; 18, at Hayton, Yorkshire; 26, at Liverpool; 28, at Southsand Head; 29, at Barnsley; and 30, in Berwickshire. The middle of October is often cited as their general time of departure. They have been noted on the 4th of that month at Whitby; 7th, at Crumpsall; 17th, at Theytons and Stretford; 20th, at Wilmslow; 22nd, at Winscombe and Totnes; 23rd, at Plymouth and Torquay; 24th, at Winscombe; 25th, at Theyton and at Northenden; 27th, at Market Bosworth and Weston-super-Mare; on the 29th, at Totnes. They have been seen at the end of November at Totnes; 5th, at Selborne; 6th, at Winscombe; 9th, at Manchester; 15th, at Brighton; 18th, at Temple Balsall, Freshwater, and Hunstanton; and on the 30th at Penzance. They have been recorded on the 3rd December at Redcar; 9th, at Norwich (this was a young bird, and fell down a chimney); and 10th, at Goole. Moreover, one was observed on the 18th January, 1837. This would be some casual laggard excepted from the autumn flight. Generally they congregate in great swarms as though afraid to make the final venture. Thus the number of them to be seen towards September in the south-eastern parts, and especially coasts, of England, is a matter of astonishment. Their actual departure, however, is rarely noticed, and it is, therefore, supposed that they take their flight in the dark or in the early morning before the world of humanity is on the alert.

Mr. William Black, in the "Times," 19th November, 1881, says that his observations at Brighton, and the testimony of the Newhaven fishermen, led him to suppose that the big flight of swallows and martins took place about three weeks before that date—say, about October 27th—whilst smaller bands had been visible during November, culminating in a second flight on the 13th. Even on the 15th some of them were seen placidly skimming about the Greenway coastguard station.

The swallows have been noticed in seaward flight. They "scout and hurry along in little detached parties of six or seven in a company, and sweeping low, just over the surface of

the land and water, direct their course to the opposite continent at the narrowest passage they can find." Some swallows, quite exhausted, flew on board a ship between Cerigo and Malta, 21st April, 1860. Hence these birds must have ventured on a flight of 480 miles. There are various similar observations. The frequent storms, and it may be the fatigue of the journey, must be fatal to many birds. Humboldt says that he saw a swallow on the rigging when at sea 120 miles from land. The old notions as to the torpidity of the swallow during the winter are now generally abandoned. Jenner, in order to satisfy himself of the migration of birds, procured several swifts, and by taking off two claws from the foot of twelve marked them in a manner that ensured their easy recognition. The year following when the nesting places were searched, several of the marked birds were found. They were also noticed in the second and third year. After that, the systematic examination ceased, but seven years later a cat brought one of the mutilated birds into the farmhouse.

The paternal instinct is strong in the swallow, yet it is less powerful than the migratory impulse. When the southward craving comes upon the old birds they will even abandon the young in their nest to perish of cold and hunger. For a time the young birds may obtain a scanty living, but the advancing cold destroys the insects on which they feed. It is possible that casual discoveries of such starving birds may have given rise to the fables as to swallows remaining torpid during the winter. In the spring of 1821 Mr. John Blackwall saw a pair of house martins take possession of the nest they had built in the previous summer. In order to re-enter they had to draw out the dried bodies of three nearly full-fledged nestlings, whom they had abandoned. Another couple, after some unavailing attempts to drag forth the dead bodies of their abandoned offspring, covered the opening of the nest with clay. The home of the unfortunate youngsters thus became their tomb. In 1825 Mr. Blackwall had fourteen martins' nests examined, and five of them contained dead nestlings, whilst in another there were two eggs, which had evidently been abandoned just before hatching. He also found that the sand martin sometimes abandoned its young. The same acute observer, amongst other birds, took swallows and house-martins from the eggs on which they were sitting and then replaced, when the birds, apparently unconscious of danger, resumed their maternal task.

A swallow was killed near Manchester, 9th November, 1880, and Mr. T. Lister of Barnsley, to whom it was sent, says that it was a young bird, and had probably been hatched too late to join the main body in their flight. Doubtless it had been abandoned by its parents. The 26th September, 1851, was a very cold and stormy day, and no less than ninety-two swallows, chiefly young birds, were picked up almost dead with cold and hunger. In 1836, Mr. Blackwall examined some martins' nests in a barn at Hilltop, Blackley. Thirteen contained eggs or dead nestlings. There is even a suspicion that at other seasons they are sometimes guilty of infanticide. The philosopher Kant, when walking in a wood near the wall of a ruin, heard the swallows high up on the wall in shrill debate. "Presently there came a pause, then a long, low plaintive note from one of them, and immediately thereafter a nestling, not yet able to fly, fell to the ground." Kant concluded that the debate was that of a council, which decreed that there was not nest room or food enough for all the little ones; one must be sacrificed, and the one low plaintive note was that of the mother submitting to the fatal conclusion.

These observations, whilst they show the strength of the migratory instinct, do not throw much light upon its causes. This mystery has been most poetically expressed in one of those delicately wrought lyrics with which Mr. E. W. Gosse from time to time favours the lovers of poetry.

THE RETURN OF THE SWALLOWS.

"'Out in the meadows the young grass springs
Shivering with sap,' said the larks, 'and we
Shoot into air with our strong young wings
Spirally up over level and lea;
Come, O swallows, and fly with us
Now that horizons are luminous!
Evening and morning the world of light,
Spreading and kindling is infinite!'

"Far away, by the sea and in the south,
The hills of olive and slopes of fern
Whiten and glow in the sun's long drouth,
Under the heavens that beam and burn;
And all the swallows were gathered there,
Flitting about in the fragrant air,
And heard no sound from the larks, but flew
Flashing under the blinding blue.

"Out of the depths of their soft rich throats
Languidly fluted the thrushes, and said:
'Musical thought in the mild air floats,
Spring is coming and winter is dead!

Come, O swallows, and stir the air,
For the buds are all bursting unaware,
And the drooping caves and the elm-trees long
To hear the sound of your low sweet song.'

"Over the roofs of the white Algiers,
Flashingly shadowing the bright bazaar,
Flitted the swallows, and not one hears
The call of the thrushes from far, from far;
Sighed the thrushes; then all at once,
Broke out singing the old sweet tones,
Singing the bridal of sap and shoot,
The trees' slow life between root and fruit.

"And just when the dingles of April flowers
Shine with the earliest daffodils,
When, before sunrise, the cold clear hours
Gleam with the promise that noon fulfils,—
Deep in the leafage the cuckoo cried,
Perched on a spray by the rivulet side,
Swallows, O swallows, come back again
To swoop and herald the April rain.

"And something awoke in the slumbering heart
Of the alien birds in their African air,
And they paused, and alighted, and twittered apart,
And met in the broad, white, dreamy square,
And the sad slave-woman, who lifted up
From the fountain her broad-lipped earthen cup,
Said to herself with a weary sign,
'To-morrow, the swallows will northward fly!'"

The British Association has a committee at work who are investigating the migration of birds. The reports already issued are full of important data, but it has not yet assumed the definite form that a few more years of observation will give. Many curious facts as to the British outward and inward flight are recorded in these valuable reports. The strength of the migratory instinct is so great that birds of passage, when kept in cages, make efforts to escape as the period for flight arrives, even though at other times they appear content. The facts of migration have already been given in the typical instance of the swallow. The number of migratory birds throughout the world is very great, and their structure, which is suitable for rapid transit over long distances, enables them by this change to maintain an existence which would otherwise be impossible. The summer birds of our islands would perish amidst the severities of our British winter, whilst under southern skies they flourish. The motives for the flight appear to be suitable temperature and appropriate food. The two causes are closely related as in the case of the insectivora. The unsolved part of the problem is by

what prophetic power the bird foresees the change in his present home, and how he selects a new land. Sometimes the problem may be seen on a small scale, as in the case of the birds of paradise, which have gregarious habits, and sometimes in great flocks leave one island for another in accordance with the change of the season from dry to wet.

The theory of evolution, however, offers a clue to the mystery. The storks fly from Germany to some unknown part of Africa, but the long journey is accomplished in a few days, and the flight is unbroken save for stoppages for food. Supposing the stork were deprived of its wandering instinct, what would be the result? As Dr. Weissman has pointed out, it would die not from cold, but from want of food. How could it live when the chief food supply, frogs, blindworms, &c., are out of sight, and "even if in a mild winter a single stork could—as it has been known to do—pick up a meagre subsistence, just enough to sustain life, how would this scanty supply suffice for the multitude of birds that inhabit the same district in summer?" So with the insectivorous birds *par excellence*. What would be the fate of the cuckoo, the nightingale, and the swallow, if they remained when the caterpillars had entered upon the pupa condition, or had buried themselves for the cold months? Apart from any question of climate, there would be a famine in the land of birds. It may be said that the thrush and other birds remain with us, but then they are not purely insectivorous. The tapping woodpecker, by the aid of his carpentry, procures food as readily in the winter as in the summer. An examination of the facts of the case will show that the birds having the migratory instinct are those that could not continue for the remainder of the year in their summer haunts owing to the failure of their usual food supply Hence it may be inferred that the wandering instinct originates in the necessity of finding suitable sustenance. Our winter birds that come from the north find even in the arctic region a plentiful food supply in their summer haunts. An extraordinary number of birds breed by the margin of the frozen sea. The tropical regions do not all offer a plentiful store of food throughout the year. Some districts are completely parched and dried up, and the birds would have as great a difficulty in obtaining sustenance as amidst the rigours of a European winter. Hence the birds must either endure death at home, or seek a living elsewhere. It is not to be supposed that this dilemma presents itself consciously to the determination of

each individual, but the fact remains and gives a clue to the possible genesis of the migratory instinct. The bird world has its three divisions of residents, wandering, and migratory. The woodpecker is resident, but in winter he extends his range, for food is not so plentiful, and the district that supplied him in summer does not yield so rich a harvest in the colder weather. The merest effort of self-preservation would lead a bird impelled by hunger to fly in search of food to fresh fields. The effort imposed in the first instance by necessity, would not only be continued from habit, but the custom would be transmitted. The force of heredity is very great, and further, it must be remembered that the birds that did not wander in search of food would die. Naturally the impulse in the survivors would strengthen year by year. In this way it is conceivable that the search for food may have converted the resident into wandering birds, but it does not explain the most notable feature of migration—that the flight is always in one particular direction. That a bird when food fails should seek for it indifferently at each point of the compass is no very mysterious circumstance, but why should flocks that winter in the north, seek their summer quarters always in the south, and *vice versâ?* This can only be explained by an extension of the preceding hypothesis. The southward flight, in the first instance perhaps a mere exaggerated wandering, has by countless generations of the transmission of experience become a fixed impulse. Those who rebelled against the necessity died, and those that survived would transmit the southward cravings in stronger force to their descendants. A striking instance is that of the eider duck, which "in the arctic zone is a genuine migratory bird; on the Baltic, only a wanderer; and in the North Sea, resident." This, in the words of Dr. Weissman, is "a conclusive proof that migration and wandering is not an essential characteristic of the species, but a habit which is adopted when the necessities of life require it, and a proof moreover that the regular migration has grown out of irregular wandering in search of food."

Supposing that this is the true origin of the migratory habit, it does not lessen our wonder. Nature is economical, and never uses a large measure when a small one will suffice. The apparent method with which the birds assemble for flight, the definiteness of the routes they select, the regularity with which they seek their old haunts again and again, must ever be sources of pleasure and astonishment to the thoughtful mind. That pleasure will not be less if, in place of a sixth sense, it is seen that the choice of

routes originated in geological conditions that have passed away, and has been persisted in simply from hereditary habits. The birds do not always take the shortest way. They cross the Mediterranean at certain fixed points, which in the diluvial period were tongues of land; the birds, according to Dr. Weissman, did not in the first instance fly over in a certain direction across the open sea; they followed the land, and continued their flight when it first became marshes, and was then covered with a small arm of the sea; and the same route is still persevered in, though it is thousands of years since the land was covered by the broad waves of the ocean. The explanation is thus summed up Dr. Weissman: "The migration of birds arose out of the fact that they became possessed of countries which could only supply them with adequate nourishment for a certain portion of the year, mainly, therefore, from their colonizing the temperate and arctic zones of our hemisphere. This colonizing did not take place all at once, but gradually; for, especially since the glacial period, a gradual extension of various birds towards the north from Africa and the Mediterranean has been steadily going on. During this slow advance of the species, certain qualities essential to this mode of life have been developed in greater and greater perfection, as, for example, continuity and rapidity of flight, quickness of vision, observation and memory of places. All these capabilities are possessed also by other birds, but generally in a much less degree. The migratory birds are not endowed with any mysterious sixth sense. We see, then, how in this case Nature attains great results by what seem insignificant means. Practice and habit are the magical agencies by which, in the course of long ages, the bodily and mental capacities of birds of this species are so enhanced, that it is only after a long and careful investigation we can convince ourselves that they are not endowed with some special and peculiar power." It may be that the need for change was only taught by bitter lessons of suffering, and that many thousands perished before the first Columbus of the air winged his anxious flight from shores that were growing sterile and inhospitable to happier climes, where plentiful food and sunny skies rewarded his daring.

"Yea, the stork in the heaven knoweth her appointed times; and the turtle and the crane and the swallow observe the time of their coming."

WILLIAM E. A. AXON.

THRIFT.

More has probably been said and written within the last ten years on the very comprehensive topic of "Thrift" than on any other which comes within the scope of social and politico-economic subjects. There is a great diversity of opinion, too, as to how far during the period above mentioned the masses of the people, and especially the working classes, have made sensible progress in the direction of thrift and the acquisition of provident habits. It would be impossible within a limited space even briefly to glance at the various branches into which the subject naturally divides itself, or at the various estimates made from a multitude of standpoints as to the actual increase of national thriftiness. It may be well, therefore, to confine the following remarks mainly to the recent progress of those various societies and associations which are based more or less on the principles of providence and thrift.

Let us then, as well suited to our purpose, refer at once to a report drawn up not long ago by Mr. J. M. Ludlow on a variety of friendly, industrial, and provident societies, and trade unions. The principle of all alike is the setting aside, by practising self-denial, a portion of income in prosperous times,—in the case of friendly societies, to provide for times of sickness, want of employment, or death in the family; of building societies, to invest small savings; of co-operative societies, to eke out wages by purchasing at cost price; of trade unions, partly to provide for a rainy day, and partly to support, by combination, if necessary, a given rate of wages. The last-named object is now acknowledged to be legal, equally with provision for sickness and death, so long as no unlawful means are resorted to for its attainment. The amount of capital invested in these different societies is astonishing; and now that their affairs are taken close cognizance of by a public department, the business of dealing with them is very considerable indeed. Some notion may be formed of its magnitude from the statement that the correspondence of the office, of which Mr. Ludlow is the head, is very considerably greater than that of the Office of Works, more than double that of the Commissioners of Woods and Forests, and nearly five times as great as that of the National Debt Commissioners.

The most remarkable increase in the associations reported on occurred in building societies. The number of new societies registered in 1880 was 163; in 1881, 237—an increase of 45 per cent. For the first time the number of new building societies exceeded that of new friendly societies: that form of investing savings would therefore seem to be growing in special favour among the working and lower middle classes. The greatest increase—more than three-fourths of the whole—was in societies of the Starr-Bowkett type, and, as these are the most resorted to by working men, it seems to follow, as Mr. Ludlow remarks, that whatever objections may be entertained to their constitution, their rapid multiplication is a proof of the generally prosperous condition of that class. At the date of Mr. Ludlow's report the total number of building societies in England was 1,433; in Wales, 66. Middlesex and Lancashire were the counties which had the largest number, each including over 100. The only English county in which none were established is Huntingdon. The business done by the working men's co-operative societies in the previous year was very large. The two well-known Rochdale societies returned their respective sales at 301,836*l.* and 283,655*l.*, a very large increase on the previous year in each case. The members of many of these societies would do well to note a remark made by the Chief Registrar, that their figures are very untrustworthy, the managers being "wholly unable to understand what is meant by a trade account." Fifty-one new co-operative societies were registered during the year, and sixteen are returned as each having a total membership of over 5,000. The largest is the Leeds Industrial Co-operative, with 18,430 members, of whom over 1,200 joined in the previous year. The total proceeds of the sale of goods, excluding sixteen societies (presumably small ones) which did not report, amounted to more than 20,000,000*l.*, an increase on the year preceding of 2,312,280*l.* It may be interesting to mention that one of the new societies (at Snitterfield) proposed to undertake co-operative farming, two (in Poplar and in south-east London) contemplated applying co-operation to the keeping of public-houses, and two others intended to start coffee-houses. The loan societies reported on included a total membership of 43,113—an increase of 8,516—and the accounts showed a money total advanced and paid by depositors and shareholders of 109,651*l.* The amount due to depositors and shareholders on the last day of 1881 was 359,324*l.*, while the sums in the hands of borrowers on the

same day reached an aggregate of 336,321*l.* Mr. Ludlow considers the figures of the societies submitted to him remarkable as evidence of returning prosperity among the working classes.

Trade unions deserve special notice, as being in some sense political in their influence, if not in aim. It is much to be regretted that there appears to be no effectual means of compelling the officers of unions to send in their returns. Though the omissions to do so are few, they are numerous enough to preclude a complete statement being made of their membership and funds. This remark applies, indeed, more or less, to all the societies reported on by Mr. Ludlow. The number of trade union members actually returned was 200,370—22,483 fewer than in the previous year, while the funds were returned at 258,663*l.*—a falling off of 13,750*l.* The annual income showed a decrease of 29,228*l.*; the total was 228,211*l.* There was a falling off of 4*d.* per member in the proportion of income to membership, which is attributed to the cessation of recent extraordinary efforts to keep up or restore the finances of the unions. Seven unions had over 10,000 members each, and five (instead of seven in 1880) had over 10,000*l.* annual income. The Amalgamated Society of Carpenters and Joiners stood at the head of the list with 17,764 members, funds amounting to 46,395*l.*, and an income of 42,173*l.* As showing the growth of unionism among farm labourers, it may be noted that the National Agricultural Labourers' Union numbers 20,000 members, and had funds to the amount of 6,607*l.*, and an income of 7,758*l.* The fluctuations in the financial position of trade unions were most remarkable. The enormous increase in some cases in a single year seemed to show that a great amount of pressure can be applied in some way to obtain money when it is wanted. The boiler-makers and iron shipbuilders, for example, raised their funds from 9,195*l.* in 1880 to 23,294*l.* in 1881. In 1879 the amount was 28,519*l.* The funds of the Durham Miners were increased from 10,000*l.* to 15,000*l.*, although there was a falling off in the membership of 5,000. Mr. Ludlow's general conclusion from the trade union returns was that they "indicated a strengthening of the position of this class of bodies, which afforded so valuable a test of the condition of the working class."

The return is, as Mr. Ludlow points out, valueless for any purpose of legislation in connection with friendly societies, but it bears, as far as it goes, a remarkable testimony to their bene-

ficial effects. The number of members of friendly societies is estimated at 7,000,000. Of these 4,000,000 are taken (as a minimum) to be adult males. Now the number of adult males in the workhouses who had been members of such societies is given as 11,304. It seems to follow, therefore, that the percentage of members of friendly societies who become paupers is 0·28, or rather less than 1 in every 354. A more minute analysis of the return brings this out even more clearly.

If we pass on to the last annual report of the Chief Registrar of Friendly, Industrial, and Provident Societies, and Trades Unions, we shall find further satisfactory progress in thrift and wealth by the working classes. It appears from this official publication, that the co-operative and building societies under the Act of 1874 number between them nearly 1,000,000 members, owning funds to the amount of more than 47,000,000*l.* The capital of the building societies alone exceeds 40,000,000*l.*, and the number of members, who are chiefly of the working class, reaches 428,316.

It is perfectly true that the sum mentioned, doubled though it may be by other savings, is not a really great capital for a class so numerous, with an income so large, as the working men of England. Owning as they do only here and there a house, laying by for a rainy day, but in very few instances, comparatively speaking, it is evident that thrift is not a general habit with them. The great majority of the working classes are probably as reckless as they ever were ; still, there are signs of amendment, and no sounder investment could be found by the class in question than the purchase of the houses they inhabit.

England differs from the Continent in the occupations of the people, and in their tastes and habits. The "million" are less provident here than abroad, and their savings are not invested in the same manner. Earth-hunger and unremitting toil are both the bane and the blessing of the French peasant. In England, shorter hours prevail in better trades than farming, and the working man, quitting the country for the town, must spend or invest his money in the town. There are some persons, it is true, who claim for him the ownership of land, and bewail, on his behalf, the difficulty of obtaining it. No argument can be too absurd for the support of the pet theories of enthusiasts ; and we are sometimes told that working men in England are "sighing for the soil, divorced from their mother earth, and

deprived of the birthright of every free-born person." Experience teaches us on the contrary—and the report already quoted confirms the view—that English artisans can invest their money much more profitably than in land. There is plenty of land in the market; and if the habits and pursuits and places of abode of the working classes rendered such property secure, the shrewd and organising heads amongst the artisans would soon form companies for its purchase. But paradise for them lies elsewhere than in the rural districts; they know perfectly well that land pays no interest when you farm it unskilfully, and very little when you let it, and therefore they prefer houses for investment.

The Registrar-General's report informs us that 1,200 building societies have been formed under the Act of 1874; and the lesson to be derived from the fact is that no kind of help can compare with self-help. In more prosperous times for agriculture, we were told that compulsory division of the land would create among the working men of England the virtues of thrift and providence which they are said to lack. What would really have happened if working men in town or country had been persuaded to hire or buy small plots of land, we need not now inquire.

In the rural districts, improved wages have increased the power of saving, and the Post Office Savings Banks have, no doubt, encouraged thrift. What the respective investments of town and country in these safe deposits may be, we cannot say; but their total amount a few months ago reached nearly 36,000,000*l*. Another test of thrift exists in the friendly societies—the Hearts of Oak, the Ancient Druids, and the rest, down to the numerous village clubs, which set at defiance the science of the actuaries, and yet effect an immense amount of good. The members of the non-registered societies of that class amount in numbers to 5,000,000; and no doubt some of these, especially in villages, are not so sound as could be wished. It is certain, however, that the number of cases of dissolution and insolvency of such societies, and the consequent disappointment and discouragement of thrift among the members, is far less than has been supposed. While the friendly societies of the manufacturing, mining, and metropolitan districts are generally in a state of progress, those of the agricultural districts, registered or unregistered, are in the opposite condition of slow decadence. To some extent, no doubt, the Post Office Savings Banks have replaced them, and in many of the lesser towns, such as Tun-

bridge Wells and scores of others, artisans and other working men have bought, or are now purchasing, their houses or plots of building land by the agency of the numerous societies formed for such purposes. Probably the agricultural class is, in the south of England at any rate, worse provided with the various opportunities of and inducements to thrift than any other class; and this is most unfortunate, since all able-bodied labourers of the rustic class might readily lay by a considerable sum during the six or seven years preceding marriage, if the methods for investment were only on a par with the temptations to extravagance.

As to the general subject of providence among the working classes, there can be no doubt, notwithstanding the evidence of amendment, that the British workman is still the most extravagant member of the commuuity. His income is enormous, and a small percentage of it saved would, at no distant period, put into the hands of his class all the houses occupied by it in our great cities. The Chief Registrar's report assures us, however, that the working class is slowly laying by a little capital; and this must be regarded as news of much importance. Absolute and helpless poverty is not merely a source of wretchedness, but of danger; for the poverty of a class implies its degradation. A useful but most melancholy lesson is afforded, in regard to the results of poverty, by the small farmers of Ireland, who, when starving, are like the waifs of our great cities, too poor to be honest. Unfortunately there are 260,000 small farmers in Ireland rated at less than 4*l.* a year. We cannot desire the creation of such a class in England; but we do desire increased providence and wealth among the working classes, and we may therefore hope that the Report of the Friendly, Industrial, and Provident Societies may become more favourable as years pass.

Only last August Mr. O. Morgan, speaking at an Odd Fellows' banquet near Wrexham, referred to their association as having a capital of more than 5,000,000*l.*, and numbering 565,000 members. The latter he said represented more than 500,000 of men who had "so far learnt to value the blessings of thrift as to secure themselves against the indignity of a pauper's loaf and a pauper's grave."

The extension of the system of "co-operation" in manufactories and various branches of trade, of penny banks, of "Government" insurance, and other organisations conducive to thrift, are all working in the desired direction; and there is a

good hope that at the end of another decade a still greater progress will have been made than in the last.

In conclusion, we would add a few words on one of the many suggestions which have been made as to special lines in which thrift might be practised by the great masses of the population. It is in the matter of food. England under existing conditions cannot produce from her own soil sufficient food for her own children. It might be made to produce more, and perhaps will gradually be made to do so, and except under very special circumstances we may continue to expect a regular supply of food from foreign countries. But a third factor should be brought into play, and that is thrift in the use of food. Taking the line adopted by Dr. Richardson, though we do not commit ourselves entirely to his vegetarian views, the accomplishment of this object might to a great extent be secured in the following ways: Namely, by giving up the use of substances used as foods which are not foods, but are inimical both to health and life; by learning to use foods as near as possible to their first and cheapest growth; and by reducing the quantity of food used to the lowest practical working quantity.

Of supposed foods to be given up one article stands out so prominently that the removal of it alone would almost outweigh the value of all foreign food supplies at present imported. That article is alcohol. Lord Derby is reported once to have said that of sixpence spent on alcohol fivepence was lost. Even that is an under-calculation. The little residue, the fraction of food that is present in alcoholic drinks, really does not approach that calculation, while the injury that is inflicted by the utterly useless and fearfully injurious action of that which inebriates, and does not feed either muscle, bone, nerve, or sense, but degrades them all, is an interest cent. per cent. on the fraction of food, levied with the most rigid and torturing exactitude.

In the way of learning to live on foods nearest to the first and cheapest growth, we must bring ourselves to use more freely vegetable foods and the fruits of the earth. The accomplishment of thrift through the use of vegetable substances and fruits is common sense itself, for when we use animal food, we, as a general rule, first use the animal that supplies the food to transmute the vegetable food into animal. It is true that one flesh-eating animal may live on the flesh of another flesh-eater. The process is limited in range, and at the bottom of it there must be a first supplying animal that gets its sustenance from the

vegetable kingdom. This is only telling in other words the truth that there is no primitive form of food, albuminous, starchy, osseous, in the animal world itself. We have, therefore, in procuring the animal in a state for food, to catch it or rear it, to feed it and tend it; to accept the loss of it from possible disease, to go to the expense of killing it and dressing it, and, in the end, to use, after all, but a portion of its carcase for that food which we require from it. All these acts mean money, and, as a rule, money over and above, in great part, that which is spent in merely collecting the primitive vegetable substances which might be as directly applied to the wants of man as indirectly through the animal. The cheapness of vegetable food is plain enough.

The next question is that of quality, or of goodness, amount of nourishment of different kinds. Let us test the fact in relation to the amount of water in different foods. In the primest joints there is as much as 70 or 75 per cent. of water. There are some vegetables which contain more water than this, viz., potatoes, turnips, cabbages, and carrots; but there are other vegetables which contain infinitely less water. Oatmeal, for example, contains only 5 or 6 per cent.; good wheaten flour, barley meal, beans, and peas, 14; rice, 15; and good bread, 40 to 45 of water. Taking, then, the value of foods as estimated by their solid value, there are, it will be observed, a large class of vegetable foods which for solid value are incomparably superior to animal flesh. Peas, beans, rice, oats, barley, and wheat, are of this class. In the animal foods named there are twenty-five parts of solid matter to the 100; in the vegetable foods specially named there are eighty-six parts. If we compute from the solid matter the value of flesh-forming and strength-producing foods on the animal and vegetable produce, we find some other useful facts. A leg of mutton suggests some other useful facts. In a leg of mutton we find 24 per cent. of solid material, 10·20 of albuminoids, or flesh-forming substance, and 8·76 of fat, or force-producing substance; the rest of it is water. Let us compare that with wheat as a favourite vegetable substance, and we shall find in the 86 per cent. of the solid matter of wheat, 11·50 of albuminoids, or flesh-forming substance, and 71 of force-producing substance, or starch with a little fat. Wheat is, by this calculation, much more valuable than leg of mutton, and the vegetarian would, with fair argument, challenge many further similar comparisons. Coming, in fact, directly to matter of quality or goodness, it may honestly

be admitted that, weight by weight, vegetable substances, when they are carefully selected, possess the most striking advantages over animal in nutritive value. The practical lesson is, that a man can live most healthily on a condensed vegetable diet, in combination with fresh fruits and green vegetables. Once understood as a matter of thrift, vegetable foods would soon come into general, if not into universal, use.

The quantity of food that is taken is the third particular subject in respect to thrift in food to which attention should be directed. There can be no doubt that the average amount of food taken by the majority of persons far exceeds the amount that is really necessary. The saving that might be made has been calculated as nearly half of that which is actually required by the members of the community that can claim anything approaching to a competency. It is in the great centres of population that this form of economy of food is most urgent, for it is in them that the greatest waste is carried on. In the time of the cotton famine in Lancashire, it was estimated, in respect to animal food, that the average amount consumed per day in England was 7½ ozs. per person, while in France it was under 3 ozs. This was by a supposed equal division of the animal food through the whole of these countries respectively; but when the estimate was applied to the metropolitan centres of these countries, it gave a consumption of 22 ozs. per day for each person in London, and 9 ozs. in Paris. It is not, however, to be supposed that the enormous over-consumption of food in these great centres was food actually eaten by the people. It was food eaten, and eaten in excess, but it was also food wasted in various ways.

These, as we have intimated, are views put forward by Dr. Richardson, and though exception is taken to them by many persons, the example of thrift which he sketches out would, if but partly copied by the people, generally work a considerable revolution in food economy in this country.

J. J. Manley.

THE CHANNEL TUNNEL.

The Project.

The proposal to form a tunnel between France and England seems to have been first made in the early years of this century. It was evidently no novelty to Theodore Hook, when he wrote under the title "Bubbles of 1825," the following stanza :—

> "A tunnel underneath the sea from Calais straight to Dover, Sir,
> That qualmish folks may cross by land from shore to shore,
> With sluices made to drown the French if e'er they would come over, Sir,
> Has long been talked of, till at length 'tis thought a monstrous *bore*."

The talking at that early period does not seem to have led to action, but in 1834 a French engineer, Thomé de Gamond having previously made some soundings, proposed to run an iron tube along the bed of the Channel and to line it with masonry. He also suggested a bridge which it was estimated would cost 70,000,000*l.* or 80,000,000*l.*, and a causeway cut by three passes, and crossed by swing bridges. These plans being unacceptable he returned to the project of a tunnel through the chalk. In 1856, having published an account of his experiments, he made an appeal to both Governments in favour of carrying out the scheme. Lord Palmerston, although opposed to the idea, presented De Gamond to the Prince Consort, who is said to have examined his plan with great attention. "The St. James's Gazette," to which journal we are indebted for these facts, adds :—

"Ten years later, a tunnel was talked of from Cape Grisnez to the neighbourhood of Folkestone. It was to cost 7,500,000*l.*, and in 1869 an Anglo-French Company was promoted to carry it through. The Franco-German War alone, De Gamond thought, hindered the French Government from lending State aid to his project. In 1872 he at last saw his dream taking practical shape in the formation of The Channel Tunnel Company (Limited), and with Mr. Hawkshaw and Mr. Brunlees, was appointed consulting engineer. But the privations he had suffered during the siege of Paris (he was shut up in the city) and the horrors of the days of the Commune had told on him too heavily; and he died in Paris in February, 1876."

In the newspapers of the day we read that the Liberal Government had granted all needful concessions to the company, but the "Times," which devoted four columns to the subject, observes that "there hangs over it an element of extreme un-

certainty." Three years later, namely in 1875, we find that two companies, one French and one English, had agreed to try an experiment on each side, having obtained the necessary concessions and the needful capital. The concession, so far as England was concerned, was one for acquiring land for the purposes of experiment, and it was stipulated that no scheme should be valid until it had received the sanction of the Legislature. Moreover, the solicitor of the War Office stated at the time that the Committee which then dealt with the question, was "formed without any element of that which, in an English point of view, is the essence of the scheme—viz., its effect on the insular position of Great Britain in relation to national defence." In 1880 an Act was passed permitting the South Eastern Railway Company, of which Sir Edward Watkin is chairman, to acquire land west of Dover, for the purpose of experimental borings, but this permission did not commit the Government or the House of Commons to any further sanction of the scheme which does not appear to have been regarded from what the Duke of Cambridge terms its national side. In 1882 a Committee was appointed under the presidency of Sir A. Alison, to consider the important question from this standing-point, and the strong opposition made by military men led to the general belief both of the press and of the public, that the project was doomed. But neither the Channel Tunnel Company, under the presidency of Lord Richard Grosvenor, nor Sir Edward Watkin's Submarine Continental Railway, was dissolved in consequence of this report, and in the month of April last a further Committee was appointed consisting of five peers and five members of the House of Commons, "to inquire whether it is expedient that Parliamentary sanction should be given to a submarine communication between England and France; and to consider whether any or what conditions should be imposed by Parliament in the event of such communication being sanctioned." This Committee consisted of the Marquis of Lansdowne (chairman), Earl of Devon, Earl of Camperdown, Lord Aberdare, Lord Shute, Mr. Baxter, Sir Hussey Vivian, Sir Massey Lopes, Mr. Peel, and Mr. Harcourt, and the results of their labours are embodied in a thick Blue Book, published in July, 1883. It opens with several draft reports proposed by members of the Committee, one of which, prepared by the chairman, is in favour of the tunnel, while six of the reports are opposed to it. The result is expressed in the following words:—

"The majority of the Committee are of opinion that it is not expedient that Parliamentary sanction should be given to a submarine communication between England and France."

The Feasibility of the Scheme.

That a tunnel could be formed beneath the bed of the Channel seems to be the general opinion of engineers. Mr. John Fowler, indeed, who has a rival and, as he thinks, a far more practical scheme, considers the probabilities of failure so great, that "a tunnel proposal passes away from what may be called practical business into the region of dangerous speculation." "I entertain," he adds, "a strong opinion that nothing will ever come of it; in the meantime it is delaying the carrying out of a practicable and valuable work. For instance, there would be no difficulty whatever in two or three years in providing a thorough communication by means of ferries; but on the other hand at the end of twenty years we may find a number of ruined people but no tunnel." Sir John Hawkshaw's evidence proves that he at least has no doubt whatever that the work could be accomplished in the course of eight or ten years. He is now, he states, making a tunnel under the Severn, and he believes that the geological character of the strata beneath the Channel would be less troublesome than that with which he has to deal under the river. The cost inclusive of all expenses, apart from such contingencies as the requirements of the War Office, he puts at 8,000,000*l.*, while Sir Edward Watkin places the cost at 3,000,000*l.* Opinions differ greatly as to details; for example, the speed of trains, the danger of a breakdown in a tunnel thirty miles in length, and especially the difficulties of ventilating a line more than 200 feet below the bottom of the sea, on which subject one of the witnesses remarks that "when the current of air is taken from a low depth and then rises to the summit, the difficulty is to imagine that it will then descend; that is not the action of air generally." Another witness, Colonel Beaumont, R.E., states that there is no tunnel in existence that will give the experience required for the ventilation of a Channel Tunnel, but he believes the difficulty might be met by compressed air locomotives, a suggestion which a third competent witness does not regard as practical. On this subject it should be observed, we have no experience to guide us, the proposed tunnel being more than four times the length of Mont Cenis, the longest tunnel in existence, "where there is

not the same difficulty with regard to the variety of gradients which forms a necessary part of the Channel Tunnel scheme." On the whole there is, we believe, a consensus of opinion both among French and English engineers that the tunnel could be made, but this point did not come, except incidentally, under the consideration of the Joint Select Committee.

The Tunnel from a Commercial Aspect.

The promoters of the proposed tunnel or tunnels believe, of course, that the scheme would be commercially successful. They anticipate not only that a vast number of passengers would pass through it daily, but a large quantity of goods also. Continuity of traffic and saving of time would, it is said, be effected, and also personal comfort be secured to passengers. According to Sir E. Watkin, his projected tunnel would allow of the conveyance of 13,000,000, or 14,000,000 passengers yearly, and "probably 20,000,000 or 30,000,000 tons of goods." Taking the present number of passengers both ways in one year at 464,000, his opinion is that the tunnel would be used the first twelvemonth by four and half millions, and that the number would increase to an enormous extent. This is also the opinion of Lord R. Grosvenor. Looking forward to an immense growth of traffic, Sir E. Watkin also anticipates the time when there will be more tunnels than one. Breaking bulk in the carriage of goods is pronounced the great evil of transit by sea, and Sir Edward considers that "we are in the most dangerous position that any nation ever was in from the lack of inter-communication by land enjoyed by other European countries," and that the tunnel would add "wonderfully" to our safety as a nation. It is admitted, however, that England is now the emporium of the world, and has the carrying trade in her hands, and also that if a tunnel were constructed the great bulk of goods would still be sent by sea. Coals, for instance, which can be sent from the Tyne to Dunquerque at 4*s.* a ton, would never be sent through the tunnel, and a ton of wine which can be carried from Bordeaux to London for 12*s.*, would if sent by land and the tunnel route be charged 44*s.* Fragile and perishable goods such as fish, vegetables, eggs, articles de Paris, glass, ladies' dresses and pottery would, it is stated, be forwarded through the tunnel, and witnesses consider that new sources of trade would be opened by a route avoiding the delays and risks incidental to a sea voyage. It may be well to add here as con-

cisely as possible the opinions expressed by a few competent witnesses with regard to the commercial value of the tunnel. Mr. Grierson, the general manager of the Great Western Railway Company, considers that "with the exception of perishables," the tunnel would not make a *difference* to any great extent in the transmission of goods, neither does he see in what way it would increase the trade of the country, an opinion it is but just to say that is opposed by other witnesses. It is admitted that the French tariff is greatly against us, and according to Mr. Lee, M.P., it is "made in order to prevent business as much as possible." Mr. Holden, M.P., who is largely interested in the wool trade, doubts whether much of the wool now sent from England to his works in France would come through the tunnel if it were opened, "because the sea-carriage is so much cheaper than railway carriage." On the other hand it would increase, he thinks, his business relations with the Continent. "Our French people," he says, "our customers, as we call them, who supply us with wools to comb, come to London to buy two-thirds of the wool at least that they consume. I have been in this business thirty-five years, and I know French gentlemen very well, and they are so extremely sensitive to the effect of the sea that it is perfect misery for them to come, and they would rather pay a very large commission than come."*

There is also the testimony of Mr. Slagg, M.P. for Manchester, who observes that, "The French and other continental peoples seem to shrink from the formidable nature of the voyage." This witness states that opinions in mercantile circles in Manchester are much divided upon the question of a Channel Tunnel. On the other hand, if we may accept the statements of the secretary of the London Trades Council, there is no difference of opinion among the 15,000 members of the trade societies in the London district, whose belief is that the tunnel would not only promote trade, but good feeling also.

That there would be a material saving of money by transmitting goods through the tunnel has not been alleged, neither is it proved that there would be a very important saving of time, much of the present delay in carrying goods being due to the

* We learn from tables prepared for the Committee "that of the total trade of the United Kingdom, imports to the value of 151,000,000*l.* come to this country from the Continent of Europe, and exports to the value of 127,000,000*l.* are carried from this country to the Continent. These exports and imports represent about two-fifths of the exports and two-fifths of the imports of the United Kingdom to and from the whole world."

dilatory system of the French railways. It appears to be admitted generally that it would be contrary to all experience if the proposed route did not result ultimately in a large increase of trade. It is remarkable, however, that no evidence to this effect has been tendered nor a single testimonial presented by any Chamber of Commerce. It is stated in the draft report, prepared by Sir Henry Hussey Vivian, that, "Sir Edward Watkin admitted he had received no petitions in favour of the Channel Tunnel from any particular trades in England which felt themselves aggrieved by the non-existence of the tunnel, and that there has been nothing that deserves the epithet of a wide and enthusiastic declaration or demand for the tunnel upon the part of the trading and manufacturing interests of the country."

The Dangers of a Channel Tunnel.

Enough probably has been said to show that men of business *as* business men are not opposed to the Channel Tunnel, and we have observed also that engineers have little, if any, doubt that the projected tunnel could be formed. How far such a communication with the Continent would affect our insular security is obviously a question of infinitely higher moment than the increase of commerce or the physical comfort of passengers. That the scheme would involve a certain amount of risk is indeed acknowledged or implied by its projectors. Sir Edward Watkin states that he has designed a fort, which would cost a quarter of a million of money, and would answer the three purposes of defending Dover Harbour, Folkestone Harbour, and the tunnel; and Lord Richard Grosvenor has also made a scheme of defence upon which the company he represents are prepared to spend 10,000*l*. On the other hand, one witness, an American, considers the danger of invasion, the cost of defences, and the risk of panics as "entirely second to pushing trade," and the Trades Council, represented by Mr. Shipton, which has not much faith in military men, and wants to do away altogether with our military forces, has sufficient belief in the prowess of working men, and that, if the necessity arose, they "could well look after themselves in a physical sense." A like opinion is held by Mr. John Bright. He laughs at the panic-mongers and pronounces all his countrymen Bedlamites who believe that the construction of the proposed tunnel would increase the danger of invasion. Their arguments, he said, were absurd, monstrous, inconceivable. The objections to the tunnel went on two

assumptions; one that the French Government was composed of brigands of the worst and most desperate character, and the other that the great English nation was a nation of imbeciles.

This extreme view is, however, held by comparatively few Englishmen. The general belief of men favourable to the scheme is that the danger of such a communication can be guarded against, and that the advantages of a tunnel predominate over the risk it involves. This is the opinion of Lord Lansdowne, who states in his draft report that, assuming the entrance of the tunnel to be defended by a first-class fortress and by mechanical appliances for destroying it in case of danger, the risk to the country would be scarcely appreciable, and that therefore, he and those who think with him do not consider the enterprise should be prohibited on merely political grounds. They desire, however, to express their opinion "that the exit of the tunnel and its approaches should be placed under the exclusive control of the military authorities."

How to Defend the Tunnel.

According to Sir E. Watkin and Lord Richard Grosvenor, the expense of guarding the tunnel must ultimately fall upon the ratepayers. Sir E. Watkin admits that the shareholders of his company ought to pay the cost of a great fortress, but he does not think they should pay for its defence, "upon this simple ground, that if this enterprise were made, the shareholders are large taxpayers and ought not to be made to pay twice over." He does not consider, however, that the fortification when manned would increase our military expenditure. "I do not think," Sir Edward says, "the Minister of War would put anything extra in his estimate for it." Lord Richard Grosvenor's company is also willing to spend a lump sum for the defence of the tunnel, but not an annual sum. Sir J. L. Simmons, who observes that as regards our defences we are living in a sort of fool's paradise, considers that this defence would need a first-class fortress and a permanent garrison at all times of 10,000 men, a charge which, in his judgment, the country could hardly undertake, considering the weakness of our army. And he estimates the cost of this garrison at half-a-million of money a year. The Duke of Cambridge, who calls Dover the most dangerous point in England, considers also that the garrison there should be permanently manned by 10,000 men, and in this judgment Lord Wolseley concurs. In addition to a first-class fortress to defend

the tunnel—Dover in its present condition is rated as third class —several plans have been proposed for destroying the tunnel, or for rendering it useless in case of alarm. Thus it has been suggested that means should be available for flooding the tunnel, for blowing up a portion of it by explosives, for destroying the ventilating machinery, for stopping the way with shingle, which is Sir J. Hawkshaw's proposal, for closing the terminus with two large gates, "both of which may be shut, but both of which cannot be open at the same time," gates so strong that no amount of explosives would blow them down. General Sir Patrick McDougal, who has paid special attention to the defences of the country, considers that the construction of the tunnel would create an additional point, as important as London itself, for anxiety and defence. Not that there would be danger "if we had time for preparation, and used the means at our disposal." He states that his idea of the sort of fortress for the defence of the tunnel "would be a number of detached forts, each supporting the other, and occupying a large periphery or a large circumference of ground; the forts might be a mile distant from each other, or three-quarters of a mile, or half a mile, according to the nature of the ground, and in that way eight or nine miles of circumference might be covered." "In my idea," Sir Patrick adds, "they would be a series of small forts, requiring a garrison of about 500 men each." At the same time he considers it would be "decidedly advisable" if a tunnel were constructed to change the system at Dover, so as to have a garrison there constantly prepared for war. Another suggestion is that the control of the tunnel should not be at its mouth, but on the heights above Dover, and finally Sir Henry Tyler proposes a system of galleries with masked guns, &c., to be under the charge of a moderate garrison chiefly of officers. In other words, he would station a garrison under the sea which might at any moment when it was judged necessary, fire its explosives and arrest the progress of the enemy. The idea is ingenious and amusing, but passengers would in all likelihood prefer sea-sickness to the possibility in some unfortunate moment of being accidentally or unnecessarily blown to pieces. "Nobody" says Sir J. Hawkshaw, "would use the tunnel if there are to be large masses of gun-cotton or dynamite, or any other explosive there, waiting for somebody to touch a button somewhere and explode them. These are impracticable things and would be foolish."

The Protest of Military Men.

It will be remembered that in 1882 a Military Committee, presided over by Sir A. Alison, published an elaborate report on the proposed construction of a Channel Tunnel, and the opinions then expressed are reiterated by some members of that Committee in the evidence taken more recently. From these reports and from other sources it may be well to note concisely some of the views expressed by military authorities and by engineers. England, writes General Sir John Lintorn Simmons, in the "Nineteenth Century," may be regarded as an island fortress, unassailable so long as the integrity of the silver streak, its moat, is maintained, and he adds, "This moat *alone*, as I once heard the late Emperor Napoleon say, saves us the burden of a large army raised by conscription such as Continental Powers are compelled to keep in a state of constant readiness for war." Our first line of defence is the Navy, our second the Regular Army, Militia, and Volunteers. The possibility of an invasion has always been admitted through the temporary loss of supremacy in the Channel, and in that case the tunnel, if it could be seized and worked, "would become merely the advanced guard of an army exceeding a million of men, who would overrun the country by sheer weight of numbers. It will, therefore, be essentially necessary that the tunnel's mouth should be made absolutely secure against attack. This, however, will be impossible; no fortress can be made impregnable." In Sir John's judgment, therefore, the formation of the tunnel would lead to compulsory military service, and create a new danger to the safety and security of England. Major-General Sir E. B. Hamley is of the same opinion, and observes with regard to the appliances for closing or destroying the tunnel in a moment of alarm: "The failure to close the tunnel at the critical moment would entail consequences so grave that no prospective convenience to the public, no advantage to the promoters of the enterprise can, in comparison to the chance of such consequences, be considered as reasons which ought to prevail." The probability of the mechanical apparatus being out of gear at the supreme moment is allowed, we believe, by every military witness, and it is admitted also that the terrible responsibility of destroying such a work, which might mean a vast destruction of human life at the same time, would well make a ruler hesitate until it was too late. Such an act, too, would, it is considered,

precipitate a war, since "experience teaches us," to quote the words of Admiral Sir A. C. Key, "that when the relations between two countries have been much strained, a very slight indication of want of confidence in one or the other nation is likely to bring on a war." Admiral Key's opinion, by the way, with regard to the danger of the tunnel is expressed in decisive language: "To my mind," he says, "it would be running a very great risk; an enemy who wished to surprise this end of the tunnel might do it without very much risk, and obtain the greatest prize that any country ever strove for in this world; the prize is enormous if they succeed, and the risk of failure is small." General Lord Wolseley holds the same opinion, and, indeed, he will not allow that it is an opinion but a certainty. After admitting, in reply to a question by Lord Aberdare, that a small force might be landed and seize the defensive works, and that the French troops might be poured through the tunnel without exciting suspicion, he adds, when Lord Aberdare observes, "You think so?"—"I do not think so; these are points upon which I speak with authority. It is a most feasible and easy thing to effect." The Duke of Cambridge also thinks that a Channel Tunnel would prove a source of positive danger, which he cannot believe the people of this country would consent to accept for any problematic amount of commercial profit. "If this tunnel be constructed," he says, "I wish to record my opinion—an opinion shared by the ablest of our officers—that our only positive security can be found in following the example of our neighbours, by creating a vast army like theirs—an army which would probably entail the necessity of a compulsory system of universal military service." There would be always a risk, His Royal Highness says, of a *coup de main*, no matter how thoroughly the tunnel was guarded. Major-General Sir A. Clarke, on the contrary, thinks that surprise now-a-days is almost impossible to conceive, an opinion met in Appendix G of the recent Blue Book, where 107 cases, several of them sudden seizures, are recorded in which hostilities have occurred Europe and America without declaration of war.

It is admitted that a sudden attack on the Channel Tunnel fortifications could only be made in time of peace, and it appears to be considered that the greatest danger would arise from a small force landing unobserved and seizing the gate of the tunnel so that troops might readily be poured through. And it is suggested that it would be easy to send a thousand men

through in ordinary passenger trains disguised in different dresses, precautions having been taken at the other end to stop any communication with this side. The risk might be tremendous, but it is not one soldiers would fear to face. It is believed generally, we may add, by our military authorities, that in times of peace the vigilance needed for guarding the tunnel would be relaxed, and that all idea of danger would be forgotten, which is the common habit of our people. It is believed, also, that however admirable and varied the means of defence, and, if need be, of suddenly destroying the tunnel, there is no security that they would be available when the time for using them arrived; it is admitted, also, as we have observed already, that there is no such thing as an impregnable fortresss, and that the construction of defensive works, which all military witnesses regard as indispensable, would involve a considerable increase in our military expenditure. It may be added that no fear of any attack through the tunnel is entertained provided it were anticipated. In that case, says Lord Wolseley, "fifty men at the entrance of the tunnel can prevent an army of 100,000 men coming through it."

The Protest of Civilians.

Apparently there has been no party feeling in the objections raised against the tunnel. The pamphlet compiled by the editor of the "Nineteenth Century" contains a protest against the tunnel from many of our most distinguished men of all shades of opinion. Indeed, comparatively few names of high eminence are absent from the list. Men of science, for instance, are represented by the names of Professor Huxley and Sir John Lubbock; the poets, by Mr. Tennyson and Mr. Browning; the artists, by the President of the Royal Academy; business-men by the Governor of the Bank of England; medical men by Sir James Paget; the church and the bar by clergymen and lawyers who stand at the head of their respective professions; the Army by almost every familiar name in the service; a statement which applies with equal truth to the Navy; and the aristocracy by the most eminent members of the Upper House. It is no exaggeration to add that all the principal journals of the country, whether Liberal, Conservative, or Radical, have raised their voices against it. Rightly or wrongly, papers like the "Times," the "Pall Mall Gazette," the "Daily News," the "Standard," the "Echo," the "St. James's Gazette,"

the "Spectator," the "Saturday Review," as well as the most important of the provincial journals, have opposed the scheme, and several of them have returned to the subject again and again. They consider it one of the most important matters that can be brought before the country, and deprecate all attempts to treat it lightly. They affirm that no amount of possible advantages justify even the minimum of risk where the safety of a nation is concerned; they consider that we should be never safe from panics; that the public will not submit to the cost of supporting year by year the military defences required; that the intricate arrangements for blowing up the tunnel would either become useless or be set aside to allay the fears of timid travellers; and they observe that, while Sir John Adye is the only soldier of reputation who is not alarmed at the idea of a tunnel, he is also not alarmed at the necessity which might arise of our becoming a great military Power. There has always been the risk of an invasion, say these journalists, from the loss of our command of the Channel; if the tunnel adds to this risk, as is almost universally admitted, that alone is a sufficient argument against the promotion of the scheme. In short, they say the Channel Tunnel is doomed, and no Government will now venture to regard it with favour. It would be a mistake, however, to suppose that the promoters are silenced even by the adverse decision published in the latest Blue Book. A portion of the money advanced by the shareholders has, we believe, been returned to them; but Lord Richard Grosvenor expresses his firm belief that a Channel Tunnel will one day be formed; and Sir Edward Watkin has apparently an equally confident hope that there will be ere long, to quote his own words, "an extension of the British Empire to the middle of the Channel."

Mr. Fowler's Steam Ferry Scheme.

The Joint Select Committee on the Channel Tunnel paid considerable attention to the counter-proposal of Mr. Fowler, who undertakes to carry passengers and goods across the Channel without any change or transfer, and with as much expedition as a tunnel. This scheme is not a new one. It passed the House of Commons in 1870 and 1872, the last time unanimously, and "was only thrown out in the House of Lords by the casting vote of the Chairman." The difficulties which existed in 1873, viz., the absence of good harbours, will shortly be removed by the completion of the works now in progress at Calais and

Boulogne. Of the six Draft Reports prepared by the Committee, three appear to be in favour of this scheme, while a fourth observes that, in the opinion of the Committee, "improved harbour and ship accommodation might provide for that development of goods and passenger traffic between England and the Continent, which is so much desired by all, without any expense to the nation and without raising any questions of public policy." Mr. Fowler, as we have already stated, thinks "there is good cause to doubt the practicability of any tunnel being constructed under the Channel." The boats he proposes to build must be swift and of great power, and in size about 7,000 tons, with about 12,000 horse-power. The time occupied in crossing would be less than an hour between Dover and Calais, and a few minutes over the hour between Dover and Boulogne. The luggage would be examined while crossing the Channel, and trains from any part of England would be conveyed direct to Paris, but Mr. Fowler states that although it would be quite practicable, he does not propose carrying the engines across. The carriages would not be on a deck but enclosed with a deck above them, "so that in point of fact the carriages should be, as it were, in a floating station, and that floating station should have all the comforts and convenience of an ordinary station." Mr. Fowler thinks that a capital of 2,000,000*l.* would be ample for his scheme, and that if he gained an Act of Parliament the whole capital would be forthcoming in the course of twenty-four hours. In alluding to this plan in his draft report, Sir Massey Lopes observes: "This proposal seems to be free from the obvious objections of the tunnel scheme; it would involve no national risk; the military difficulties would be avoided, and the safety and security of the country would in no way be compromised by it. It does appear only reasonable that before attempting a submarine communication, which involves so many serious difficulties, the capabilities of steam communication should be thoroughly exhausted."

JOHN DENNIS.

SMOKE ABATEMENT.

The steadily increasing density of population of our large commercial and manufacturing centres renders it daily of more importance that everything should be done to render the sanitary conditions of those centres as perfect as possible. In the last thirty years immense strides have been made in the right direction. Improved sewers have been constructed; increased, and better water supplies provided; laws for the regulation of sanitary matters passed; and officers appointed whose duty it is to see that these laws are properly carried out. By all these means great good has been effected. The death-rate of our large towns has shown a tendency to decrease, rather than to rise, thus indicating that these precautions have done much to counteract the baneful effect of the crowding together of large masses of population into limited spaces. But much still remains to be done; and foremost among those evils which call for remedy must be placed the smoke nuisance.

In the olden times when wood formed the staple article of fuel, the fires emitted comparatively little smoke. But with the introduction of coal matters became at once changed. Already as early as 1603 Sir Hugh Platt endeavoured to mitigate the evils of coal smoke by a fuel which he described in a pamphlet entitled "A new, cheape and delicate Fire of Cole-balles, wherein Sea-cole is, by the mixture of other combustible bodies, both sweetened and multiplied." In this work Sir Hugh writes:—"My opinion is that smoke which in our usual fiers doth immediately ascend, from the sea-coles unprepared, must needs, according to the foule and grosse matter of the cole, be also foule and smooty itselfe. But when the smoake doth passe and become, as it were, searsed through the lome (which is the band that knitteth the coles together), it is so refined and subtilated before his penetration, as that it either consumeth and swalloweth up, or els leaveth behind it the grosse residence of his own nature, whereby that black kind of peppering or sea-cole dust (if I be not greatly deceived) is either wholly or for the most part avoided: being a matter of so great offence to all the pleasant gardeins of Noblemen, Gentlemen and Marchants of this most honorable Citie and the suburbes thereof, besides the discoloring and defacing of al the stately hangings and other rich furniture of their houses, as also of their costlie and gorgeous

apparell." And again, "also the stirring up of common sea-cole fiers after they are once caked and knit together dooth make a hellishe smoke and smoder, dispersing the smootie substance and subtile *atomies* abroad into the aire, which in a fire of balls doth never happen." Although Sir Hugh's remedy,—consisting in using as fuel "cole-balles" made up by hand and composed of about two parts of ordinary sea-coal and one part of small coal, sawdust, or other suitable material, kneaded into balls with the help of a thin paste of loam and water—may not commend itself to our readers as one adapted to the present day, his book is of interest as showing at what an early period the smoke nuisance was beginning to be felt.

In the well-known diary of John Evelyn, one of the original members of the Royal Society, we have the entry :—"July 11, 1656. Came home by Greenwich Ferry, where I saw Sir John Winter's new project of *charring sea-coale* to burne out the sulphure and render it sweete. He did it by burning the coales in such earthen pots as the glasse-men mealt their metall, so firing them without consuming them, using a barr of yron in each crucible or pot, which bar has a hook at one end, that so the coales being mealted in a furnace with other crude sea-coales under them, may be drawn out of the potts sticking to the yron, whence they are beaten off in greate halfe-exhausted cinders, which being rekindl'd make a cleare, pleasant chamber fire, deprived of their sulphur and arsenic malignity. What successe it may have, time will discover." Here, two and a quarter centuries ago, we see the germ of the smokeless coke fire. In 1661, Evelyn published his "Fumifugium, or the Inconvenience of the Air and Smoak of London Dissipated, together with some Remedies, humbly proposed by J. E., Esq.," a pamphlet against the smoke nuisance, of which he writes in his diary, September 13th, 1661 :—"I presented my "Fumifugium," dedicated to His Majesty, who was pleased I should publish it by his special commands, being much gratified with it." In his introduction to this work, Evelyn says :—"A presumptuous Smoake issuing from one or two Tunnels near Northumberland-house, and not far from Scotland-yard, did so invade the Court that all the Rooms, Galleries, and Places about it were filled and infected with it, and that to such a degree that men could hardly discern one another for the Clowd, and none could support without manifest Inconveniency." And again, speaking of London as renowned for healthiness, he says that if she is to retain her title to health,

" she is to be relieved of that which renders her less healthy, really offends her, and which darkens and eclipses all her other Attributes. And what is all this but that Hellish and dismal Cloud of sea-coale? which is not only perpetually imminent over her head: for as the poet (Æneid XI), *conditur in tenebris altum caligine cœlum;* but so universally mixed with the otherwise wholesome and excellent Aer that her Inhabitants breathe nothing but an impure and thick Mist, accompanied with a fuliginous and filthy vapour, which renders them obnoxious to a thousand inconveniences, corrupting the Lungs, and disordering the entire habit of their Bodies; so that Catharrs, Phthisicks, Coughs, and Consumption rage more in this one city than in the whole Earth besides." He goes on to enumerate many more evils caused by the smoke from the chimneys of London, and as a proof that these evils are really due to the smoke produced in the burning of "sea-coale," he mentions as a fact, that in 1644 when Newcastle was besieged and consequently no coals could be brought to London, the orchards in the Strand and Barbican bore "plentiful and good fruit," such as had not been seen before or since. Evelyn charges the factories of London with being the chief offenders, and says that "whilst these are belching it forth their sooty Jaws, the city of London resembles the face rather of Mount Ætna, the Court of Vulcan, Stromboli, or the Suburbs of Hell, than an assembly of rational creatures and the Imperial Seat of our Incomparable Monarch." "The weary Traveller at many Miles distance sooner smells than sees the City to which he repairs."* "Not to mention the complaint I have heard from parts even of France itself, lying south-west of England, did formerly make of being infested with Smoakes driven from our Maritime Coasts, which injured their Vines in Flower." The remedies which Evelyn proposes are in the first place the removal of all breweries, dyeing-works, lime-kilns, soap-works, and similar factories, to a distance from London; and, secondly, the formation of plantations of various shrubs and flowers, special preference being given to the rosemary, "the flowers whereof are credibly reported to give their scent above thirty leagues off at sea upon the coasts of Spain."

* During the Fire of London, Evelyn again refers to this subject as follows:—"Sept. 5th, 1666. The coale and wood wharfes, and magazines of oyle, rosin, &c., did infinite mischeife, so as the invective (Fumifugium) which a little before I had dedicated to his Majesty and published, giving warning what might probably be the issue of suffering those shops to be in the Citty, was look'd on as a prophecy."

Thus we see that soon after the introduction of coal, the evil effect of the smoke from coal fires on the climate and health of large towns began to make itself felt, and that thinking men set to work to try and devise remedies for the evil. And although we may not *now* be able to accept any of the suggestions which they made, we must nevertheless give well-deserved honour to such men as Sir Hugh Platt, Sir John Winter, and John Evelyn, F.R.S., as worthy pioneers in the crusade against the smoke nuisance. In a second edition of "Fumifugium," issued in 1772, the editor, Samuel Pegge, insists that "A method of charring sea-coal so as to divest it of its smoke, and yet leave it serviceable for many purposes, should be made the object of a very strict enquiry; and premiums should be given to those that were successful in it."

Turning to the present century we find Count Rumford, the founder of the Royal Institution, bent on improving the then existing grate; and we are still enjoying the benefit of many of his improvements. But it is only within the last forty years that any serious steps have been taken towards mitigating this evil. The "Towns Improvement Clauses Act, 1847," contains a clause compelling certain factories, &c., to consume their own smoke. Since then innumerable schemes have been propounded, having in view the abatement of smoke and improvement of sanitary arrangements generally. Of these we believe the earliest is the elaborate and comprehensive scheme of William Flockton, surveyor to the town of Sheffield, published in 1849, "for removing by simple means all smoke, noxious vapours, &c., from the atmosphere of towns." Mr. Flockton proposed that instead of opening into the air, the chimneys in each house should be connected with one down-current shaft, which in its turn should connect with a flue running under the street. These flues, which were also to be in communication with the sewers, would gradually converge to one large and lofty tower or chimney. In the lower part of this tower a fire was to be kindled, and in this way all the smoke, sewer gases, &c. drawn out of all the ramifications of this network of sewers and flues, and in their passage through the fire be consumed and rendered innocuous. The author believed that the "fire, once kindled, produced by the combustion of inflammable gases accompanying the smoke would burn spontaneously in the same way as the combustion of foul air from some old shafts connected with coal mines." In the tower the supply of air might be easily regu-

lated, and the author considered that the perfect combustion of the inflammable substances drawn from the drains and chimneys would produce a "flame of such magnitude and brilliancy as to assist materially in lighting the district by night." For small towns one central shaft would, the author considered, be sufficient; for larger places the town might be divided into two or more districts, each having its own central tower and network of sewers and flues. By this means, too, a better ventilation of dwelling-houses was hoped for, and thus "the means of ventilation be brought to every man's door, like a supply of water or gas," and he would be enabled by simply making communication to "send out the foul air in the same simple manner in which water and gas are sent in." But the enormous costliness of such a scheme, and the great doubt as to whether it would be successful if carried out, prevented further action being taken in this direction. In 1853 "The Smoke Nuisance Abatement (Metropolis) Act" was passed, extending, within the boundary of the metropolis, the limits of the above clause; and in 1856 a further "Amendment Act" was enacted, by which glass and pottery works, baths and wash-houses, and steamers plying on the Thames west of the Nore, hitherto exempt, were included in the provisions of the Act. By these Acts, which, with the Public Health Act, are those at present in force, all owners of factories, river steamers, &c., are compelled to have their furnaces so constructed as to consume their own smoke. But this Act does not extend to private houses, and, it is at the present time the smoke from the fires in private houses which forms by far the largest proportion of the black and gloomy pall of soot almost constantly hanging over London in the winter.

Now, although, as we have seen, it has long been recognised that the pouring of vast quantities of smoke from our fires into the atmosphere of our towns is not conducive to the comfort of the inhabitants of those towns, it is only within the last few years that people have begun thoroughly to recognise the full magnitude of the evil effects to health and life which are produced by this cause; and even now, the extent of the evil is by no means as completely realised and appreciated as it should be. It will, therefore, be well worth our while to consider for a few minutes the climatic influence of the present state of matters.

We are all familiar with the long line of smoke left by a steamer or train on a calm day, and how this line of smoke will often remain almost immovable for minutes, and occasionally,

when the air is exceptionally calm, even for hours. Now, during a winter's day, more than 300 tons weight (at a low estimate) of coal-smoke are emitted from the chimneys of the metropolis in the space of twenty-four hours, and unless the wind be very strong much of this smoke must be always hanging as a kind of curtain over London, shutting off, to a great extent, the rays of the sun. And this is actually the case, as, apart from days of dense fog, the duration of sunshine in London averages only about one-third of that in the surrounding country; and looking at London from any distant hill on a clear summer day we almost invariably see it surmounted by a murky cloud, through which the Victoria Tower at Westminster, and one or two other lofty buildings are generally to be seen projecting into the clear atmosphere above. But baneful as is the influence of the smoke when in this state, it is far more so when, combined with mist, it appears as the far-famed "London Fog."

In the country,—especially in the autumn and winter,—a light haze or white mist is very often seen covering the ground in the early morning. These consist of minute particles of moisture, which have been precipitated by a fall in temperature from a stratum of air charged with aqueous vapour. As soon as the sun's rays begin to gain power their warmth re-vaporises the aqueous particles, and the mist is dissipated. But in London the case will probably be very different. Before the sun has reached a sufficient altitude for its rays to have much power, the evolution of smoke from the chimneys will have commenced, and the accumulating smoke curtain will prevent a large proportion of the sun's rays from reaching the mist, and consequently delay its dissipation. Or if the smoke curtain should mix with the mist we shall get a yellow fog, almost impenetrable to the sun's rays, and only very slowly dissipated. The former of these two cases will usually happen when the layer of mist only extends a few feet from the ground, thus not coming at all into contact with the cloud of smoke which is usually above the house tops. The latter, when the layer of mist being very thick, the smoke issuing from the chimneys at once comes in contact with the moisture, and forms a very dense mixture which gradually sinks and becomes incorporated with the white mist, converting it into a dense yellow fog. Of course atmospheric influences also play an important part in determining the character of the fog, and it often happens that even a very shallow mist becomes a yellow fog,

but very rarely that one reaching above the tops of the houses remains a white fog. In the yellow fog the smoke not only mixes with the watery particles, but the tarry and oily matter contained in the smoke forms a thin film over these particles thus very much retarding their vaporisation. It is a common practice of manufacturers who have to keep open vessels of aqueous solutions for long periods at high temperatures to cover the surface with a thin film or layer of oil. This considerably hinders evaporation, and consequent diminution in volume of the liquid. It is thus evident that the smoke of a large city, in whichever of the above-mentioned ways it may act, tends greatly to retard the vaporisation of the watery particles and consequent dissipation of the fog.

And now as regards the effect of fog on health. In the first place, the mere shutting out of the sun's rays tends to produce depression of spirits and lowness of health. But a far more tangible effect is that produced by being placed in, and compelled to breathe, such an atmosphere. Everyone who has experienced such a fog knows the irritation to the eyes, throat, lungs, &c., which it produces. Unpleasant it has always been allowed to be, but its effects are, at first sight, of a transitory nature, and its full power for evil was thus for a long time overlooked. The well-known fogs during the Cattle Show week in December, 1873, did much to open people's eyes on this point. In that week we heard of large numbers of the cattle dying, and when the Registrar-General's report for the week was published, Londoners were startled by the announcement that the deaths for that one week were 700 above the average; and after making all deductions for other causes, 500 deaths remained which could be attributed to nothing but the character of the fog. This large mortality, be it also remembered, included only those cases where death occurred *within the week, and in London*, and took no account of the probably much larger number of cases where death occurred either subsequently or after the visitor to the Show had returned to the country, nor of the cases of illness which were successfully combatted. After these disclosures the Registrar-General's weekly returns were anxiously watched for as throwing light on this subject, and the revelations were terrible and unmistakable. Let us take as an example the foggy weather of the early part of 1880. In the week ending January 31st, which had been very cold and foggy, the total deaths exceeded the average by 607, those from respiratory

diseases being 341 in excess. The next week the great cold continued, and was accompanied by more intense fog, and the total deaths in the metropolis were 3,376, or 1,657 above the average. Of these deaths, 1,557 were from respiratory diseases, or an excess of 1,118 over the average; in other words the deaths from respiratory diseases were three and a half times the average for that time of year, and in the following week—ending February 14—the deaths from respiratory diseases were 550 above the average, this excess being probably due to the residue, from the two preceding weeks, of cases in which the fatal termination had been slower. But analysing the numbers we find that in Croydon, where the cold was as intense as in other parts, but where there was immunity from fog, the total death-rate only rose from 35 for the week ending January 10 to 36 for that ending February 7; whereas in Haggerston, where the fog was intense, the death-rate was doubled, and so with the other districts. Where the fog had been thickest the rise in death-rate had been most marked; where the fog had been least intense the deviation from the average death-rate had been smallest. Taking the excess deaths from respiratory diseases of these three weeks (from January 18 to February 7 inclusive) we get the enormous total of 2,010 deaths as the result of the eight days of fog which occurred during that time. And for the same reasons as stated above, when mentioning the 1873 fog this number is probably far below the real truth. Thus we see that taking the lowest estimates a single day's intense fog in London is more destructive to life than an average important battle, or calamitous railway or shipping disaster. The loss of the "Captain" with its whole crew did not probably destroy more lives than many a single day of fog has done in London alone. But the evil does not cease here, for, fearful as the above facts are, they are probably far surpassed by the effects produced on the health of the survivors; although, of course, from the nature of things, it is impossible to obtain any reliable statistics on this point. That of the very large number of people in London suffering from consumption, bronchitis, and similar diseases, a very considerable number can trace their illness to the foggy atmosphere in which they live, admits of scarcely any doubt.

Enough has been said to show that the Abatement of the Fog and Smoke Nuisance is a question of the utmost importance to the inhabitants of London and other large towns—for every-

thing said of London is equally true, on a lesser scale, with regard to all other coal-burning towns—and that it is imperative that some real and vigorous steps should be taken in the matter. Before passing, however, to a brief review of some of the principal remedies which have recently been proposed, let us look for a moment at the more general appearance and behaviour and effects of a London fog. The London fog varies from the white mist just beginning to be tinged with smoke to the intense, dull red-coloured fog in which, standing at the foot of a lighted street lamp, it is impossible to detect more than the faintest glimmer of its light. These fogs, too, not only consist of moisture and smoky matter, but retain, and prevent from diffusing the other products of combustion, &c. Thus Dr. Angus Smith found that the air of a street in Manchester contained an average of ·040 per cent. of carbonic acid, but that in a fog this rose to ·067 per cent., or more than three-fifths. The London fog, after being formed in or over London, by no means confines itself thereto, but is driven by the wind over the suburbs, and is sometimes even experienced—although of course in a much diluted state—as far as fifty miles in the country. In the suburbs, a breeze blowing *from* London almost invariably brings with it more or less fog or gloominess, and with the growing extent of London and consequent increased intensity of the smoke-curtain, the district affected is yearly becoming larger. Within the last twenty-five years roses grew abundantly and luxuriantly in St. John's Wood, for instance, now scarcely one is to be seen which has been grown there. Richmond also has now come under the ban, and its hitherto clear and delightful views are often misty and gloomy. The list of flowers which can be reared there is also becoming yearly more circumscribed. The Honourable Rollo Russell, in a most interesting pamphlet on "London Fogs,"* which it is to be hoped will be largely read, says that some six or eight years ago, he "counted *one hundred and six* particles of soot on a square inch of snow in Richmond Park after two days of N.E. wind"; and again "after a period of dry N.E. wind, the leaves of the trees and the grass leave a black mark of soot on everything which touches them."

But it is not only from a moral and sanitary point of view that the abatement, I would rather say the prevention, of smoke is to be desired. The arguments on the economical side of the

* Published by Stanford.

question are just as conclusive. Every pound of smoke issuing into the atmosphere is so much good fuel wasted. It is probable that at present 1 per cent. of all the bituminous coal used is lost in smoke. Now in London alone this loss would represent a money value of about 100,000*l.* a year. The smoke-laden atmosphere is infinitely more destructive to all kinds of property than pure air. Thus the cost of renovation of the exterior alone of the Houses of Parliament is 2,500*l.* annually; and other property suffers in proportion. But by far the greater part of this cost is due to the contamination of the air by smoke, &c., and might be saved by a more rational method of using our fuel. Without taking into account the depreciation in value of house property, loss of time from illness caused by fogs, and loss of time and money by travelling of persons who live out of London to escape from the fogs, the Honourable Rollo Russell computes the actual *annual* loss entailed on London for extra washing, painting, renewal of furniture and textile fabrics, renovation of stonework, chimney sweeping, and artificial lighting caused by the contaminated state of the atmosphere, and for loss of fuel escaping as smoke, as *more than* 1,761,000*l.*, and this is by no means an exaggerated estimate. From an artistic point of view the result is the same. A marble or stone statue erected in the country retains its original colour undefiled for centuries, but in London it is scarcely uncovered before it begins to be assailed by soot, tarry smoke, &c., and after a few months, or at most years, it has become so begrimed and blackened as to be rather an eyesore than a delight. Public and private buildings suffer in the same way, giving the streets a dull and gloomy appearance in marked contrast to those of other smaller towns which are not such sufferers from the smoke nuisance.

The appointment of a joint committee of the Public Health and Kyrle Societies led to the formation of the Smoke Abatement Exhibition which was opened in the Exhibition Galleries at South Kensington, on November 30th, 1881. The object of this exhibition was to enable the public to inspect, and, as far as possible, see in action, the various appliances available for the consumption of fuel for heating, cooking, and manufacturing purposes, in an economical and sanitary manner. The Exhibition included not only stoves, furnaces, engines, &c., but also various kinds of fuel. In connection with the Exhibition the Committee arranged for the testing of any of the grates, stoves, furnaces,

uels, &c., which the exhibitors chose to submit to them, and have embodied the results of these testings in the "Official Report of the Smoke Abatement Committee." In this work (published by Smith, Elder, and Co.) all the results are tabulated according to the class of the object tested. The tests were carried out under the supervision of Mr. Kinnear Clark, C.E., Professor Chandler Roberts, and a sub-committee composed of eminent scientific men In the case of domestic grates and stoves the heating power per unit of fuel consumed, rate at which the fuel burns, relative quantity of smoke which escapes, and many other data, are all carefully given; and similar details in the other classes. Altogether the book contains a mass of most valuable matter, and will prove a most useful help to anyone wishing to form an opinion as to the grate best suited for his or her purpose. The Exhibition was visited by about 116,000 people, and was followed by another on similar lines in Manchester; the results of the testings in the Manchester Exhibition being also incorporated in the already mentioned report. These Exhibitions did a great amount of good, both in calling the attention of the public to the subject, and also in stimulating the manufacturers to make improvements in the existing grates, &c., for the purpose of obtaining more economical production of heat, and an abatement or prevention of smoke. After the closing of these two exhibitions it was resolved, at a public meeting held at the Mansion House, July 14th, 1882, "That it is desirable that the work thus far carried on by the Smoke Abatement Committee be continued, and for that purpose a Smoke Abatement Institute be formed." Such an Institute, with a distinguished and representative Council, with its head-quarters at 44, Berners Street, W., has since been formed, having as its objects: "*a.* To promote the abatement of coal smoke and other noxious products of combustion in cities and other places, in order to render the atmosphere as pure and as pervious to sunlight as possible. *b.* To check the present serious waste of coal, and the direct and indirect loss and damage accompanying the over-production of smoke and noxious products of combustion, and to encourage improvements in the production and application of heating and lighting, and the economical use of fuel." "The work of the Institution is to bring more generally to public notice the enormous waste of fuel and attendant outlay resulting from imperfect combustion; to indicate the nature and extent of such waste; to further stimulate and assist inventive and manufacturing ingenuity in the

production of improved heating appliances; to provide proper facilities for enabling skilled experts to test and record the merits of such appliances, to issue publications for general information, and, generally, by the promotion of all means tending to more perfect combustion of fuel, and consequent abatement of the excessive production of smoke, to obviate the sanitary and other evils resulting therefrom, and thus secure large saving of outlay on fuel, whether for domestic or manufacturing purposes."

Evelyn, as we have seen, ascribed the smoke nuisance to the factories, &c., and in his time these may have been the principal delinquents, but now there is no doubt that the chief offence lies in the domestic hearth. The Smoke Abatement Acts already cited, and the clauses concerning the smoke nuisance which have been inserted in the various sanitary Acts, &c., have given the proper authorities power to step in and compel all traders so to arrange their furnaces, &c., as to avoid emitting more than a very small quantity of smoke. These laws, if properly enforced, should be sufficient to effect the desired purpose; and to show that their enforcement cannot be looked upon as tyrannical, we may mention that Mr. A. Fraser (of Messrs. Truman, Hanbury, Buxton, and Co.), at one of the Mansion House meetings, said: "By care, and by the use of furnaces which have been daily in operatian for nearly thirty years past at our works, I may fairly say our chimneys are smokeless; indeed, that no smoke at all comes from them except a trifling quantity on first lighting the fires or in 'banking them down.' At other times no smoke is visible, although we use ordinary bituminous coal; and while thus benefiting our neighbours by preventing smoke, we have saved ourselves some 80,000*l.* during that period by the more economical consumption of coal."

It is, then, to the grates, stoves, and methods of warming of our domestic houses that we must now turn our attention, if we wish to obtain some mitigation of the evils of the smoke nuisance. It is now incontestibly proved that the average domestic grate is totally unsuited for its purpose. In the first place it emits a very large quantity of smoke, and, in the second, the waste of fuel is enormous. The greater part of the heat generated by the burning coals passes up the chimney and is lost, and we may consider ourselves fortunate if we can obtain one-eighth part of that heat for warming the room; indeed, in most cases the heat actually utilised in the room does not amount to one-twelfth, often not to one-twentieth of that produced by the fuel burned. But when

we come to the question, What is the best remedy for this state of things? we have a difficult subject before us, and one on which there is great diversity of opinion. Of course this is not a matter in which any detailed plan can be laid down, as the best means to be used in particular places *can* only be decided by taking into consideration the particulars as to construction, requirements, &c., of each case. Still there are certain main principles which are open for discussion. The various systems may be classed as follows:—i. The open grate burning (*a*) coal, (*b*) coal and coke, (*c*) coal or coke and gas, (*d*) gas; ii. The closed stove; iii. Hot water or steam pipes. The use of hot water or steam pipes may be very suitable in large buildings, or even in rows of houses in which arrangements have been made at the time of construction of the houses for heating by this method, so that the whole row may be heated from one central boiler-room; but in general this system is out of the question, and we may, therefore, confine ourselves for the present to Classes i and ii. Is it more economical and healthy to employ open or closed grates?

Each system has its advocates, of whom many on both sides are men of reputation, whose opinions necessarily carry great weight. There is little doubt that closed grates are more economical than open ones, *i.e.*, that with the consumption of equal weights of the same fuel the closed stove will warm the room more than the open grate; and the question therefore is, has the open grate any advantages which counterbalance the loss in economy? To answer this question we must enquire into the way in which each stove does its work. In the open grate the heat source is a mass of intensely hot burning fuel, and from this heat is freely *radiated* into the room. In the closed stove the whole stove is heated, but attaining a *very* much lower temperature, very little *radiation* of heat takes place, the chief heating being by the air in contact with the stove becoming hot by conduction, and as that heated air rises its place is taken by fresh, and the whole air of the room thus becomes warmed. In the open grate the air heated by passing over the burning fuel passes up the chimney, and consequently hardly any heating by *conduction* occurs. What then is the difference in a room heated by *radiation* from one heated by *conduction*? *Radiant* heat passes *through* the air without heating it until reaching some solid (or liquid) body which, absorbing the heat, becomes in its turn heated. In a room with an open fire, then, the radiant heat from the fire warms the walls and furniture,

without (or at most only slightly) warming the air, the latter only becoming warmed by contact with these walls and furniture. It results from this that the walls and furniture will usually be warmer than the air. In a stove-heated room the reverse takes place, the air getting heated by contact with the stove, and only imparting that heat to the walls and furniture subsequently. Now the warmth of the room heated by radiation is to most people more pleasant and genial than in the other case, and I am of opinion is also more healthy. The room heated by the closed stove has also the objection that there is a great tendency for moisture to deposit on the cooler walls, which thus become damp. The open stove has also the advantage of being more conducive to good ventilation. I am therefore decidedly inclined to favour the open grate for ordinary domestic use, but it must not be at too great an expense of fuel, and if we can combine the two we shall be much better off. Now this is virtually in part done by the *ventilating open grates.* Here, instead of being built into the solid wall, a chamber is left at the back of the grate, and if possible the chimney is given one or two bends in this chamber. Air from the outside of the house is admitted into this chamber, and after being warmed in its passage over the back of the grate, and part of the chimney is admitted into the room through suitable openings. If then we have our doors and windows fitting *closely*, we get our room well supplied with *warmed fresh* air, thus economizing our heat and saving the cold draughts, which, in most houses, pass along the floor from the badly fitting doors to the fireplace, and also from the window cracks, &c.

Now as to fuel. The bituminous coal generally used gives a pleasant genial fire, but is very difficult to burn without smoke. Anthracite burns with more difficulty, and would require some slight alterations in the usual grate (which could, however, be made at the cost of about two or three shillings), but has the great advantage of being easily burned without smoke. Coke is also smokeless but is difficult to burn, and can be only conveniently used in conjunction with gas or bituminous coal. Not one of the grates tested at the Smoke Abatement Exhibition, and burning bituminous coal, was entirely free from smoke, and Professor Frankland on this account goes so far as to advocate the entire prohibition of its importation into London and other large towns. Mr. Scott Moncreiff advocates the extraction of a small quantity of highly illuminating gas (which would be used

instead of our present gas supply) from the bituminous coal, the residue being a smokeless but easily burning coal. There is still another very convenient fuel, viz., gas. At present the cost of gas fires, with properly constructed stoves, is probably slightly (though only slightly) higher than that of coal fires, but if, as is to be hoped, electricity replaces gas as an illuminant, the gas companies, with their present plant, might by a slight modification of process produce at a much lower price than at present a gas which, although non-illuminating, would be equally valuable for heating purposes. There are some advocates for a double supply of gas—illuminating and non-illuminating—but there would be great difficulties in the way of this. Already our London streets have in many cases water, gas, sewerage, telegraph, telephone, and electric systems underlying the roadway, and more additions are certainly unadvisable. But this non-illuminating gas might also be used for lighting purposes, for, as Sir F. Abel said at the Mansion House, "by a simple process it could not only be made to serve the purposes of heating, but to produce a light which might even vie with the electric light in brilliancy."

Space does not allow more than a very superficial glance at this great question, but enough has been said to show that not only is the prevention of smoke in our large towns to be desired, but that it is quite feasible, and that it is by no means chimerical to look forward to a London again freed from yellow fogs and grime, and luxuriating in its roses and even orchards, and to be able to behold it as Wordsworth did just eighty years ago—

"All bright and glittering in the smokeless air."

L. T. Thorne.

THE IMPORTATION OF FOOD.

To a country which is quite unable to feed itself with the produce of its own soil, this subject is of paramount interest.

With a population exceeding 34,800,000, and increasing daily, Great Britain and Ireland will require during the current year, for human consumption alone, 25,000,000 quarters of wheat. Now the official agricultural returns tell us that the area of the wheat crop in Great Britain in 1883 was 2,613,147 acres. At 26 bushels per acre, the wheat supply from Great Britain will be a little under 8,500,000 quarters. The contribution of Ireland

and the Channel Islands may be reckoned to be less than half-a-million quarters. It is usual to deduct a million quarters for seed and wheat consumed by stock. Upon this basis, the home supply of wheat for human consumption derived from the harvest of 1883 does not amount to much more that 7,500,000 quarters. There will, therefore, remain a deficiency of 17,500,000 quarters to be supplied in some other manner; but not nearly all this quantity will have to be imported, as the stock of wheat in the country is very heavy, probably heavier than it has ever been before.

Of late years the declared value of wheat, wheat-meal, and flour imported and retained for home consumption has exceeded 39,000,000*l.*, and the principal countries from which the supply is derived are Russia, the United States, British India, British North America, Australasia, and Germany. Besides these, Egypt, Turkey, Chili, the Austrian territories, France, Denmark, Sweden, Bulgaria, and Roumania are contributories.

The fact that there are so many corn-growing countries which are ready to send wheat to this country prevents sudden and serious fluctuations in prices consequent upon reports as to a failure of the harvest in any particular part of the world, and notwithstanding the largeness of our wants in the matter of wheat no anxiety is ever felt by the public about their being met, the only question being as to the price at which the supply can be obtained.

Next in importance to the supply of wheat is the supply of meat. For although vegetarianism has been for some years preached by its earnest apostles, it has not yet succeeded in gaining any hold either upon the rich or poor. It appears that the meat consumed in this country may be divided under three heads:—First that produced at home, secondly that of animals imported alive into this country, and, thirdly, dead meat. In a speech in the House of Commons on the 16th July last, in support of his resolution to the effect "that the landing of foreign live animals should not be permitted in future from any countries as to which the Privy Council are not satisfied that the laws relating to the importation and exportation of animals, and to the prevention of the introduction or spreading of disease, and the general sanitary condition of animals therein, are such as to afford reasonable security against the importation therefrom of animals which are diseased," Mr. Chaplin, applying the system of calculation adopted by the best authorities, estimated

the whole annual consumption of meat produced at home at the present time to be 11,075,000 tons, meat imported alive 105,000 tons, and meat imported dead, excluding ham, 204,667 tons. It is remarkable that, comparatively speaking, so little meat is imported; and yet in 1881 the value of live and dead meat, excluding bacon and hams, imported and retained for home consumption was over 11,000,000*l.*

Of live meat 45,000 tons in 1882 came from Norway, Sweden, Denmark, and British North America, which are designated clean countries, or countries free from cattle disease, and the remaining 60,000 tons came from countries to which a suspicion as to cattle disease attaches. There seems to be great difficulty in obtaining a supply of live meat. Russia is said to be always suffering from the cattle plague, and it is contended that the present high prices of meat are chiefly owing to the great diminution of stock in this country caused mainly by the introduction of foreign diseases. It is, however, considered worth while to run the slight risk (slight having regard to the great precautions taken) of disease from importing cattle, as it is impossible to secure perfect immunity without absolute protection.

As regards the importation of dead meat, statistics show that recently there has been but little increase. The importation of fresh mutton has not increased, although the price has been high. Moreover, the companies engaged in the trade have had no reason to be satisfied with the result of their trading. And no reliance can be placed on a development of a large dead-meat trade with our colonies such as Australia and New Zealand. However, an experiment was made during the past year of importing dead meat from Russia to St. Katharine's Dock, London, and if the experiment proves remunerative, the resources of that country can be utilised without fear of introducing disease. On one cargo of 1,600 quarters of beef it is stated that a profit, after paying all expenses, was realised of one penny a pound on the consignment, which yielded an average in the Metropolitan Market of 5½*d.* wholesale. The Russian Produce Company, who conducted the experiment, utilise the port of Libau, in the Baltic, which is never entirely closed to navigation during the coldest winters, and which is the terminus of a trunk line of railway traversing the whole extent of Russia.

The means of preserving meat are being perfected, and it only remains for the population of this country to welcome meat so imported. At present the butcher seems to be the only person

who benefits by the importation of dead meat, for the meat so imported is sold by the retailer, without any allusion as to its origin, at the ordinary price of English meat, to persons who would not buy it as *imported* meat even if offered to them at a lower price.

Bacon and hams supplied by foreign countries exceed 7,772,000*l.* in value, and assist greatly the economy of the lower class.

It is found possible to consume in addition to the large quantity produced in this country no less than 2,558,000 cwt. of butter from abroad (nearly two-fifths from Holland) of which the value amounts to more than 11,350,000*l.*

Of 209,801,000 lbs. of tea imported in 1881, of the value of 11,208,000*l.* (of which only 8,726,825*l.* was retained for home consumption) 45,614,000 lbs. valued at 3,072,000*l.* came from British India. In that year the consumption of tea per head of the population was 4·60 lbs. The value of coffee retained for home consumption amounted to 680,324*l.*; and the value of cocoa is slightly in excess of half a million. The Commissioners of Her Majesty's Customs have suggested that the stationary rate of consumption in the case of tea and coffee may be accounted for by adulteration before they reach the consumer. If such be the case it is difficult to understand the preference of the public for tea as a beverage.

Eggs from 750,000,000 to 760,000,000 in number, cheese of the value of 5,000,000*l.*, potatoes of the value of 1,000,000*l.*, rice of the value of nearly 2,000,000*l.*, oranges and lemons of the value of more than 1,250,000*l.*, sugar of the value of 24,000,000*l.*, and dried fruits, such as almonds, raisins, currants, figs, and prunes, of the value of 2,500,000*l.* may be added to the food supply drawn from other countries. To fresh or raw fruit retained for home consumption out of the imports a declared value of between 1,500,000*l.* and 2,000,000*l.* may be assigned.

All these and the other articles of food imported and retained for home consumption are divided into two classes, viz.:—

(1.) Articles which can be and are produced in the United Kingdom, and (2) articles which cannot be or are not usually produced in the United Kingdom.

In 1881 the value of articles belonging to the first class was 102,569,227*l.*, and the value of articles belonging to the second class was 58,511,014*l.*

It will be seen from this statement that the climate of the

United Kingdom is adapted to the production of the articles representing nearly two-thirds of the value of those which are imported into this country, and it may be asserted that to this extent this country is unable for want of acreage to supply itself. It is also noteworthy that in the list of the articles of food, which are capable of being produced in the United Kingdom, there are found those things most necessary for subsistence. And here it will be well to remember the statement of Mr. Mongredien, in his pamphlet on Free Trade and English Commerce (1880), "that it is a great though common mistake to say that the Americans inundate us with their grain. Far from that being the case, the Americans do not send us as much as one shipload of grain in the course of the whole year. Many years ago the Americans used to consign a little wheat and maize to Liverpool for sale, but of late years none at all. There are not 100,000 qrs. of grain imported in a year *for American account*. The whole of the large importations into the United Kingdom of American wheat, maize, &c., are purchases made in New York, Baltimore, &c., by English millers and dealers, which are shipped there *for English accounts at English risks*, and paid for by the English buyer before he can get possession of the goods." The same state of affairs will probably be found to prevail as regards every other article imported; and under such circumstances it would happen that beyond the first cost of the articles in the foreign country, all the profit made from food imported enures to the advantage of this country.

The quantities and values given in the Board of Trade returns of articles *imported* are frequently quoted in such a way that they appear to represent the quantities and values of articles *imported and retained for home consumption*. For example, in the year 1881, coffee imported exceeded 4,761,369*l.* in value, but the quantity retained for home consumption amounted to only 680,000*l.* in value. The difference, representing 4,081,000*l.*, was exported. And in the same year the value of tea imported was 11,208,000*l.*, but the value of tea retained for home consumption was 8,726,825*l.* The difference, representing 2,481,776*l.*, was exported. It follows that in consequence of a falling off in the imports, the country may be credited with a decreased consumption, when the falling off is simply due to a decrease in the demands of other countries which draw their supplies from this country, and the home consumption may be actually on the increase.

Owing to a delay in the issue of the report of the Commissioners of Customs for the year ending December, 1882, a summary of the quantities and values of the principal articles of food imported in that year and retained for home consumption cannot be easily prepared, but the following statistics will be instructive.

Foreign and Colonial Produce Imported and Exported. 1882.

Articles of Food.	Quantities.		Values.	
	Imports.	Exports.	Imports.	Exports.
			£	£
Oxen, Bulls, Cows, Calves . . . . . No.	343,699	.. ..	6,655,590	
Sheep and lambs . . . ,,	1,124,391	.. ..	2,558,827	
Swine . . . . . ,,	15,670	.. ..	57,539	
Bacon and hams . . . cwts.	2,904,400	115,984	7,772,063	302,284
Beef, salted and fresh . ,,	692,383	.. ..	1,785,162	
Butter and butterine . . ,,	2,169,717	53,609	11,350,909	259,337
Cheese . . . . . ,,	1,694,623	55,452	4,749,870	175,437
Cocoa . . . . . lbs.	19,101,646	8,429,893	597,419	259,860
Coffee . . . . . cwts.	1,364,084	1,016,348	5,201,536	3,971,336
Wheat . . . . . ,,	64,240,749	1,133,849	34,259,126	598,414
Wheat meal and flour . ,,	13,057,403	160,258	10,662,439	150,747
Eggs . . . . gt. hundreds	6,766,020	.. ..	2,385,263	
Fish . . . . . cwts.	1,239,217	227,302	2,079,181	487,156
Fruit:—				
Apples . . . . . bushels	2,386,805	.. ..	783,906	
Almonds . . . . . cwts.	75,374	34,309	259,949	116,133
Currants . . . . . ,,	1,012,102	130,975	1,351,939	160,588
Figs . . . . . ,,	73,578	.. ..	165,680	
Oranges and lemons bushels	4,220,427	500,813	1,659,367	199,175
Raisins . . . . . cwts.	548,911	112,016	1,027,820	199,948
Lard . . . . . ,,	667,153	.. ..	1,866,360	
Meat, preserved . . . ,,	560,581	30,799	1,693,520	104,271
Mutton, fresh . . . . ,,	189,847	.. ..	637,346	
Onions, raw . . . . bushels	3,114,454	.. ..	527,781	
Potatoes . . . . . cwts.	2,990,709	.. ..	997,120	
Poultry and game . . value	.. ..	.. ..	501,008	
Rice . . . . . cwts.	8,260,175	4,008,095	3,297,591	1,905,089
Sago . . . . . ,,	315,769	.. ..	219,232	
Other farinaceous substances . . . . value	.. ..	.. ..	752,945	
Spices:—				
Cinnamon . . . . . lbs.	1,838,039	1,510,383	103,281	82,581
Ginger . . . . . cwts.	25,485	.. ..	64,409	
Pepper . . . . . lbs.	24,777,174	19,348,933	582,674	450,407
Unenumerated . . . ,,	17,332,043	12,433,289	481,090	340,420
Sugar . . . . . cwts.	23,236,905	435,452	25,374 298	494,055
Tea . . . . . lbs.	210,663,133	38,554,177	11,043,884	2,363,689
Wine . . . . . gallons	15,715,813	1,398,484	5,458,923	615,440

The quantity retained for home consumption of any article enumerated in the foregoing table can be ascertained by

deducting the quantity exported from the quantity imported, and the value can be ascertained by a similar process.

An examination of the exports of the produce of the United Kingdom would show that, as a rule, this country does not export to an extent worthy of mention any article of food of its own production which it also imports and retains for home consumption. An exception must, however, be made as regards fish. In the year 1882, fish of the value of about 1,600,000*l.* was imported and retained for home consumption, and in the same year herrings of the value of 1,374,592*l.* were exported. In this way the fish exported nearly paid for the fish imported. Of the herrings exported Germany took 707,067 barrels, representing a value of 1,090,725*l.* Of the fish imported 375,693 cwts. were fresh, and 863,524 cwts. were cured or salted. Holland and the United States of America were the purveyors of the fresh fish, and British North America, Norway, and the United States of America were the purveyors of the cured or salted fish.

EVELYN FREETH.

HANDEL FESTIVALS.

AN interesting chapter of musical history might be written upon the festivals consecrated to the production of the masterpieces of the great "tone-poets" in Italy, in Germany, in France, and in this country, and among them few would be found worthy of a higher place than the Handel Festival, the centenary of which in its simpler form occurs in May, 1884, and which, on the grander scale of its recent developments, has taken place every third year for more than a quarter of a century at the Crystal Palace, at Sydenham. As was shown in a brief summary, contributed by the writer of this article to Sir George Grove's "Dictionary of Music and Musicians," the earliest musical festivals of which any trustworthy record exists were held in Italy, and seem to have consisted of the combined performances of the Court musicians of the French King and the Pope, just as in this country the first "music meetings" were those of the cathedral choirs, first at St. Paul's Cathedral, in aid of the Sons of the Clergy Corporation, and then at Gloucester, Worcester, and Hereford, whose "Three Choirs" still meet annually at one or other of their cathedrals. French musicians assembled more

than a century ago in large numbers to perform masses at the burial of some of their leading composers, such as Rameau; and in Austria, as far back as 1772, oratorios were performed in Advent and Lent (a custom subsequently introduced in this country) by the Musical Institution of Vienna, numbering 400 members. In Germany the famous Lower Rhenish festivals, which still draw large gatherings of artists and amateurs from all parts of Europe, were among the first performances on a large scale, but in these orchestral works have always had the chief place. In England, on the contrary, the tendency from the first has been to develope choral rather than orchestral strength, and the sympathy not only of the executants, but of the public generally, has always been manifested towards music written for choirs or for choirs and the orchestra in combination. With this manifest liking for vocal display—and England is the true home of the part song and the anthem—it is not surprising that Handel should in a short time have taken a firm hold upon the national affections, and that his music, producing the grandest and most sublime effects by comparatively simple means, should have lent itself readily to that precise mode of performance which seems still to be the most popular of all methods of music-making among English-speaking people. Connoisseurs have written many essays on the relative greatness of the chief musicians, but while doctors may differ and critics dispute Handel leads the way by public acclamation, and perhaps the secret of his supremacy lies in the fact that he places in the hands of the multitude notes which any average sight-singer can render with good effect, mated to words which are not only English, but for the most part sacred. That there is a charm in the personal identification of the performer with the composer, it would be absurd to deny, and while a musician of some culture may take real pleasure in listening to the rendering of orchestral or chamber music by finished performers, the genuine delight and enthusiasm of the "common people" are far more readily called forth by the choruses in which they can themselves take part. That this is only a partial explanation of Handel's supremacy we readily admit, for the nobility and purity of his music would in any case have won for it a very high place, but it accounts, we believe, to a great extent for the different position which he occupies when compared with Beethoven and Mozart, and still more with Schubert and Schumann.

Looking back to the first form of the Handel Festival, we find

the old Saxon composer himself taking the lead, in 1739, in a performance in aid of "The Fund for the Support of Decayed Musicians," which still lives in the Royal Society of Musicians, and still has its annual performance of the "Messiah" for the benefit of the charity. The Foundling Hospital was the scene of another festival conducted by Handel and annually directed by him up to the time of his death, the first of the programmes—for Saturday, May 27, 1749—including a selection from "Solomon." An audience numbering more than a thousand, among whom were to be seen the Prince and Princess of Wales, assembled to do honour to the philanthropic object and to the music, and some years afterwards the composer presented an organ to the institution. It was in that same year, 1749, that his "Messiah" was first heard in London—it had already been produced in Dublin on April 18, 1742—and the records of the performance, at which the King was present, describe in glowing terms the effect produced by the music, the "Hallelujah Chorus" being spontaneously accompanied by that uprising of the audience which was no less an act of reverence to the lofty theme of the words than a convincing proof of the majesty of the music. The Handel Festival, however, in the modern sense of the word, was a posthumous honour to the composer, for it was not until 1783—close to the centenary of his birth and nearly a quarter of a century after his death—that the idea of what was then considered a monster demonstration seems to have been entertained. The proposal came from three amateurs—a triumvirate worthy of honourable and grateful mention—Earl Fitzwilliam, Sir Watkin Williams Wynn, and Joah Bates, who soon obtained promises of support and co-operation from the leading professors of the time. Westminster Abbey was the scene of the first and third performances, on May 26 and 29, 1784, the second on May 27, which completed the festival, taking place at the Pantheon, in Oxford Street.

In order to show how widely the Handel Festival of 1784 differed from that of 1883, we will present in a tabular form the relative strength and composition of the choir and orchestra:—

Choir.

	1784.	1883.
Soprano	59 ..	722
Alto..	48 ..	760
Tenor	83 ..	719
Bass	84 ..	729
Total	274 ..	2930

Band.

	1784.	1883.		1784.	1883.
First violins	48	95	Trumpets	—	6
Second violins	47	92	Cornets	12	6
Violas	26	56	Horns..	12	12
Violoncellos	21	64	Trombones	6	9
Double basses	15	50	Ophicleides	—	3
Piccolo flutes	—	6	Drums .. }		{3
Flutes	6	8	Side drums .. }	4	{4
Oboes	26	8	Bass drums .. }		{1
Clarinets	—	8	Organ..	1	1
Bassoons	26	8			
Double bassoons ..	1	2	Total	251	442

Total of choir and band combined 525 3,372

It may be of interest to add that the principal vocalists in the year 1784, were Madame Mara, Miss Harwood, Miss Cantelo, the Misses Abrams, Signor Bartolini; Messrs. Clerk, Dyne, and Knyvett; Harrison, Norris, and Corfe; Bellamy, Champness, Reinhold, Matthews, and Tasca. The famous male soprano Signor Pacchierotti was added to the staff of soloists at the Pantheon. The programme at Westminster consisted on the first day of the "Dettingen Te Deum," one of the "Coronation Anthems," one of the "Chandos Anthems," part of the "Funeral Anthem," and other items; and on the third, the "Messiah." At the Oxford Street hall the programme was sacred and secular. These performances, which are usually described under the single term, "the Handel Commemoration," to distinguish them from the modern festival, attracted an enormous attendance, and formed an apotheosis almost as impressive as the actual funeral of the departed master in the old collegiate church, when it was estimated that 3,000 people were present.

The fashion thus set was followed in each of the three succeeding years by performances on an equally grand scale; and in 1791 the Abbey was once more utilised for a festival. From that date until 1834, when a performance by a band and choir of 600 took place, there seems to have been no attempt to keep up the performances; but the work done in that year—now exactly half a century ago—was virtually, as Mr. Husk, the learned librarian of the late Sacred Harmonic Society, has pointed out, the commencement of the great movement in the practice of choral music, which twenty-three years later made it possible to hold the preliminary Handel Festival at Sydenham. The Cecilia Society, and subsequently the Sacred Harmonic Society, brought together under efficient leadership a band and

choir destined to form the nucleus of the great army of instrumentalists and choralists which, in 1857, made the first Handel Festival a possibility; and it may indeed be said that, if this central and permanent organization had not been ready to hand, the Handel Festival would never have taken place, or at least would have been postponed. The concerts of the Sacred Harmonic Society, with its band and chorus of 700 performers, at which the oratorios of the master were given, formed, in fact, a series of miniature Handel Festivals, the body of the executants on each occasion being numerically stronger than that of the Westminster Commemoration. The conception of the Handel Festival in the modern sense of the term belongs to the late Mr. R. K. Bowley, at that time the general manager of the Crystal Palace, who in the year 1856, laid a plan for commemorating the hundredth anniversary of Handel's death in 1859, just as in 1784 the centenary of his birth had been commemorated at the instance of Mr. Joah Bates and his aristocratic supporters, Lord Fitzwilliam and Sir Watkin Wynn. The Sacred Harmonic Society's Committee, and foremost among them the late Mr. J. F. Puttick, the well-known auctioneer, whose hammer dispersed so many musical libraries and collections of instruments, at once grasped the idea, and cordially welcomed the proposition. The musical performance at the opening of the Sydenham Glass House in 1854, following a similar musical inauguration of the Great Exhibition in Hyde Park in 1851, had proved the feasibility of drawing together large bodies of musicians for choral and orchestral performances with the best effect; and after some consideration it was resolved to hold a trial performance at the Crystal Palace in 1857. The huge orchestra, then lacking the improvements which have since added so noticeably to its acoustic properties, was erected, and with it a large organ by Gray and Davison, and the choral body was at once organised.

The Sacred Harmonic Society's Choir was strengthened by a picked choir of 1,000 voices, forming the metropolitan contingent, all these singers being required either to give satisfactory evidence of capacity in the shape of a certificate of membership of some well-known choir, or to pass an examination in sight-singing. Another detachment from the provinces, including members of the cathedral choirs and principal local choral societies, brought the strength of the chorus up to 2,000, the band also including some country players, professional and

amateur, numbering 396. The public rehearsal which at each Festival since held has virtually taken its place as one of the performances, the programme consisting of a selection from the whole of the music of the three days, was held on Saturday, June 12th, and the Festival proper followed on Monday, Wednesday, and Friday, the 14th, 16th, and 18th, under Mr. Costa's direction. At this preliminary meeting each day was devoted to a separate work, the oratorios chosen being the "Messiah," "Judas Maccabæus," and "Israel in Egypt," the second of which subsequently gave way to what is now so well known as "The Selection." On this occasion, Madame Clara Novello, Miss Dolby, Mr. Sims Reeves, and Herr Formes, were the chief vocalists, Mr. Costa (now Sir Michael) taking the conductor's post, which he filled until 1880. The success, despite the drawbacks inseparable from singing in such an immense and then unenclosed area, was held to be more than sufficient to justify the holding of the proposed Commemoration, which accordingly took place on the 20th, 22nd, and 24th of June, 1859, with an increased band and choir, the instrumentalists numbering 460 and the choir 2,700, thus forming the largest aggregate body of musicians yet brought together. When it is said that more than 80,000 visitors made their way to Sydenham during the Festival, sufficient proof is given of the popularity of the scheme, and from an artistic point of sight also it won high praise. The "Messiah" and "Israel in Egypt" opened and closed the Festival, the middle day being occupied by a selection which included "numbers" from "Belshazzar," "Saul," "Samson," "Judas Maccabæus," with the "Dettingen Te Deum." Precautions had been taken to prevent the escape of the sound by closing in the orchestra with wooden screens, and by spreading over it the awning which ultimately gave place to the present roof. The solo vocalists were Madame Clara Novello, Madame Rudersdorff, Madame Lemmens-Sherrington, Miss Dolby, Mr. Sims Reeves, Mr. Weiss, and Signor Belletti. The second success led to the determination to repeat the Festival at intervals, and the triennial period was chosen as forming a happy medium. The first of these periodic meetings was held on Monday, Wednesday, and Friday, the 23rd, 25th, and 27th of January, 1862, and the form which the scheme then took has never since been departed from. The "Messiah" occupied the first day, and "Israel in Egypt" the third, the intermediate day being devoted to a

selection from the chief sacred and secular works of the prolific composer. The Sacred Harmonic Society again made the musical arrangements, and the solo vocalists were Mademoiselle Titiens, Madame Rudersdorff, Madame Lemmens-Sherrington, and Miss Parepa; Madame Sainton-Dolby; Mr. Sims Reeves, Mr. Weiss, Mr. Santley, and Signor Belletti, with Mr. Costa as conductor. This year witnessed the adoption of another decided improvement in the structure of the orchestra, in the addition of a solid wooden roof, covering in the whole orchestra and overlapping the front of the stage by about twenty-four feet. The effect of this vast sounding-board was materially to improve the tonal effect of the orchestral and choral numbers, and to throw forward the solos.

The Festivals have since regularly succeeded each other at the triennial periods, being held in 1865, 1868, 1871, 1874, 1877, 1880, and 1883. The staff of soloists has naturally undergone variations; and of those who sang at the first two Festivals Mr. Santley was the only representative at the Festival of 1883. In 1865 Madame Adelina Patti and Mr. Cummings were added to the list; and what may be termed the operatic contingent was strengthened in 1868, when Mademoiselle Christine Nilsson, Mademoiselle Clara Kellogg, and Mademoiselle Carola sang, and Signor Foli appeared for the first time. The openings into the nave were this year screened off, with the result of forming one gigantic concert-room of the enclosed space. The year 1871 brought forward Madame Sinico and Madame Trebelli-Bettini; Madame Sainton-Dolby, whose oratorio singing has been perhaps the greatest achievement of her long and honoured artistic career, was replaced by Madame Patey, who has since well upheld the honour of English singers by taking the chief contralto music at each festival; and Mr. Vernon Rigby, Mr. Kerr Gedge, and Signor Agnesi, were among the tenors and basses. This year was noticeable for the introduction of an organ solo as a part of the Festival programme, the composer's first concerto with Mr. Best, the famous Liverpool organist, at the instrument, serving to display another side of Handel's genius to the audience. A slight change in the arrangement of the programme of the Selection day was made in 1874, and was generally held to be an improvement, in the separation of the sacred and secular works into two distinct parts. Madame Otto Alvesleben and Mr. Edward Lloyd were the only singers among the chief artists who had not appeared in previous years. At the Festival of 1877

Madame Edith Wynne, Madame Clara Suter, and Herr Henschel joined the principals; and in 1880 the recruits were Mrs. Osgood, Miss Anna Williams, Mr. Joseph Maas, Mr. Barton McGuckin, Mr. Bridson, and Mr. F. King.

The Festival of 1883 brought the first quarter of a century of the history of this great national meeting to a close, and was marked by a change in the *personnel* of the musical staff, which, while deeply regretted, served to bring out in a striking way the inherent vitality of the institution—we refer to the absence of Sir Michael Costa from the conductor's seat. This is not the place for a panegyric upon one who is happily still amongst us, but it may be said without fear of contradiction that no conductor in Europe has ever achieved results, taking them all in all, which have exceeded in importance those attained under Sir Michael's direction at Sydenham. Like many more of our prominent musical men, he came to us as a stranger: his first appearance in this country was as a singer in the Birmingham Festival of 1829; and his gradual success in the most difficult branch of his profession was in itself an evidence of the possession of precisely those qualities which, in addition to the indispensable musical gifts, are essential to a conductor. The power of score-reading is in itself a rare attainment; the conductor who can rule an orchestra is frequently but little at home as a choirmaster, and *vice versâ*, and when these points are conceded, the possession of force of character and firmness of will become important factors in proportion to the strength of the body which has to be controlled. In other words, the successful director of an orchestra at St. James's Hall, occupied in the performance of symphonies and purely orchestral works, or the master of a choir perfectly balanced in its parts and drilled to the production of the most delicate effects of light and shade, may be *facile princeps* at his own desk, yet may be unequal to the management of a colossal band and choir. If we may compare things musical with things military—and there is perhaps more in common between them than would appear at first sight—the capacity which fits a man to command a regiment or a brigade does not necessarily carry with it the qualifications of a commander-in-chief in the field, and a successful conductor in an ordinary concert-room might easily be overweighted by a Handel Festival when the performers number nearly 3,400. It was, then, as a musical commander-in-chief that Sir Michael Costa came to the front; the occasion seemed to make the man, and despite idiosyncracies

that led him to alter Handelian scores after a fashion which roused, and rightly roused critical animadversion, and which at times induced him to strain after effects in a manner which, if it produced startling results, was a matter for regret, he filled his post with singular power, and carried band and choir over the ground with very few slips or failures. That the success of the Festivals, which has won admiration from all the great Continental conductors and critics, has been largely due to the discipline obtained under the veteran conductor's rule cannot be questioned, and his name will be identified in musical history with this great and noble enterprise. We said, however, that his absence—and it was to the last moment unexpected by the audience—proved the inherent strength and excellence of the musical force, and this again it would be less than justice to record. Succeeding to the conductor's desk in virtue of his position as conductor of the Crystal Palace orchestra, Mr. August Manns, another foreign musician naturalised amongst us, conducted the Festival with ability and energy, and possessing at the outset the confidence of the band, many of the leading members of which were accustomed to his beat, he held the key to the position. Nor was this change in the conductorship the only important alteration in the arrangements of the Festival Up to and including the Festival of 1880 the musical arrangements had been shared by the Sacred Harmonic Society and the Crystal Palace Company, but in 1882 the Society came to an end and the Company remained alone in the field, with the choice of continuing the festivals on its own responsibility or of allowing them to fall to the ground. As the Crystal Palace and its Handel Orchestra without a Handel Festival would be little better than "Hamlet" with the Prince of Denmark omitted from the cast, the directors wisely resolved to gird to the task, and, ably supported by the advisers of previous years, they carried it through to the end with success. Mr. William Henry Husk, the ex-Librarian of the Sacred Harmonic Society, and Mr. Alexander Durlacher, one of the most energetic members of its Committee, lent their aid in making the orchestral arrangements; Mr. G. Gordon Cleather, the Company's newly-appointed manager, and Mr. William Gardiner, its Secretary and for many years one of the tried members of its staff, superintended the general scheme; and the care of the critical fraternity of the London, continental, and provincial press, whose good offices have largely assisted in making the Festival known throughout

Europe, fell once more to Mr. F. J. K. Shenton, the Superintendent of the Crystal Palace School of Literature and Art. Thus officered the large body of stewards again assembled at the Rehearsal, and on the three Festival days there was not a single hitch in the proceedings from first to last. Such a result was singularly gratifying, and although the *habitués* of the Festival cannot forget the faces of Mr. Bowley, Mr. Puttick, and others, who were among the organizers of the earlier Festivals, it is a pleasant proof of the permanence of their work and of its independence of any merely personal conditions that it so emphatically "lives after them." At the Festival held on June 18th, 20th, and 22nd the solo vocalists were Madame Albani, Miss Annie Marriott, and Madame Clara Suter; Madame Valleria, Madame Patey and Madame Trebelli; Messrs. Edward Lloyd, Barton McGuckin, and Joseph Maas; and Signor Foli, Mr. Bridson, Mr. F. King, and Mr. Santley. Mr. Best was again solo organist, and Mr. Willing, the successor of the late Mr. Brownsmith as organist of the Festival, was at his usual post. The orchestral leaders were: first violins, Mr. F. Ralph (who took the place held for many years by M. Sainton); second violins, Mr. J. B. Zerbini; violas, Mr. C. W. Doyle; violoncellos, M. J. Lasserre; double basses, Mr. A. C. White. In the reed department the Danish flautist, Svendsen, came first. Mr. J. F. Brossa, being *premier piccolo*—if such a title exists—while Mr. Dubrucq led the oboes, and Mr. Lazarus the clarinets. The brass consisted entirely of London artists and amateurs; in fact, on the wind side of the orchestra there was only one provincial player, an oboist from Hull. One of the two "blowers of the double bassoon" was Dr. W. H. Stone, one of the physicians of Westminster Hospital, well known as a lecturer and writer on musical science, but who at the Festival always dons the artist's cap. The chorus drew its provincial contingent mainly from Birmingham, Bristol, Bradford, Leeds, and Glasgow. Manchester sent about a dozen representatives to the big choir, and among other towns honoured with a line in the musical topography of the meeting may be named Chichester, Chester, Lichfield, York, Durham, Wakefield, Liverpool, Nottingham, Barnsley, Hereford, Sheffield, Worcester, Brighton, Halifax, Devonport, Oxford, Rochester, Penzance, Edinburgh, Glasgow, and Dublin, so that the choir was fairly representative of the United Kingdom, although strange to say musical Wales, despite its prowess in choral song, failed to put in an appearance, not

a single resident in the principality finding a place in the record.

In order to temper our praise with a line of criticism we will close our brief record of work done with a friendly incitement to greater achievements in the words of no mean musician and critic, Sir Herbert Oakeley, the Professor of Music at Edinburgh University, who in an article on the Festival of 1880, said:—"As quoted on the title-page of this year's Festival book of words of 'Messiah,' 'Majora canamus.' Let us also sing *more* of Handel's music, and have a wider selection out of his rich bequest to his adopted country, and thus show greater gratitude for our noble heritage and priceless legacy. And when all has been said *pro* and *con* these remarkable Festivals, there is no doubt that to those attending them who can appreciate the greatest things in sacred musical art the often quoted saying will for ever have special force and meaning—

"'Hæc olim meminisse juvabit.'"

CHARLES MACKESON.

THE DWELLINGS OF THE POOR.

A DISTINGUISHED member of the present Government entered a protest not long since against what he termed "Grandmotherly Legislation," and it is by no means improbable that the recent movement in favour of legislation on the question of houses for the working classes will to many minds appear to belong to this category. And yet to place such a stigma upon it would be a manifest injustice. If the first function of a Government is to govern, it is certainly a primary duty, incumbent upon all who are concerned in law-making, to see to it that the condition and surroundings of the people are freed as far as possible from temptations to law-breaking; and as the habits and dispositions of the people must depend very largely upon the atmosphere in which they live, it is the part of a wise legislator to make that atmosphere as pure as possible. This is in effect the contention of those who have, since the passing of the Act on Workmen's Dwellings in 1868, striven to influence public opinion on the subject; and it is, fortunately, easy to show that the statesmen and philanthropists who have moved in the matter,

including men of the most various political and religious sympathies, have been actuated by the highest motives, and have neither sought pecuniary reward nor attempted to make political capital out of their work. Merely to name a few of the legislative reformers who have removed difficulties from the way of housebuilding for the poor, and of those who have invested capital in the companies formed to meet the growing needs of the people, is enough to remove the whole work from the region of suspicion, and to prove that it is undertaken in the best sense of the words for the public good. When we find Lord Shaftesbury and Lord Salisbury, Sir Richard Cross and Sir Sydney Waterlow, the Right Honourable J. G. Noel, and Mr. McCullagh Torrens, uniting, in Parliament and out of Parliament, with the single aim of helping the artisan and the labourer to house himself and his family in a well-built and healthy dwelling, the platform is at once lifted out of party politics on to the higher ground which all such national undertakings ought to occupy.

The Work to be Accomplished.

Looking first at the need which still exists for a large measure of home-provision—and it is obvious that the idea of giving each family its own separate house is as Utopian as it is eminently English—it is only needful to contrast the population with the number of houses in any given centre of labour in order to see that the existing accommodation is utterly inadequate. Taking the Metropolitan Police district and the City of London police district, which together include the whole county of Middlesex, and the surrounding parishes in Surrey, Kent, Essex, and Hertford, of which any part is within 12 miles from Charing Cross, and those also of which any part is not more than 15 miles in a straight line from Charing Cross, we find that the population in 1881 was 4,764,312, and the number of inhabited houses 645,818, giving a proportion of 7·4 persons to each house, as compared with 5·37, the average for the whole country. This, it will be obvious, means in a very large number of cases a state of overcrowding, which, unfortunately, a very slight investigation proves to be actually existing. Even from the tables in the Census, Volumes I and II, it is possible to arrive at results which go far to prove the reality of the evil, for while 7·4 persons to a house is the average in the whole area of Greater London, in many parts of the separate parishes the average is far higher. In some of the wards of Marylebone, for instance, it stands at

10·8 ; in St. Martin's-in-the-Fields at 10·2 ; in St. Luke's, Old Street, at 9·7 ; in the Great Marlborough Ward of the parish of St. James's, Piccadilly, at 11·6 ; in St. Anne's, Soho, at 13·1 ; and in one of the wards at Whitechapel at 14·3.

Remembering that such averages represent the mean between the largest and the smallest number of inmates, without reference to the size of the houses, it needs no great knowledge of the bearing of statistics to see that these figures go far to give an indirect proof of the truth of the statements made as to the herding together of the people in a large number of instances.

But while this is the result of a glance at statistical probabilities, we are able to give a catalogue of actualities, which places beyond doubt the character of the work to be accomplished by the social reformer, whether he be a private individual, the agent of the local authorities, or the representative of the imperial state, and for this purpose we propose to cite the evidence adduced before the Committee of the House of Commons appointed to consider the working of the Artisans and Labourers' Dwellings Improvements Act, 1875, and the amending Act, 1879. The Committee was charged to look at these statutes "with a view of considering how the expense of and the delay and difficulty in carrying out these Acts may be reduced, and also of inquiring into any causes which may have prevented the reconstruction of dwellings for the artisan class to the full extent contemplated and authorised by these Acts, and of recommending such amendments as may be most expedient for carrying out the full intention of these Acts, and also to consider the working of the Metropolitan Street Improvement Acts, 1872 and 1877, and of 31 & 32 Vict., c. 130, and 42 & 43 Vict., c. 64." The Committee, which was "ordered" on May 9, 1881, was on June 9, 1881, nominated as follows:—Mr. Courtney, Sir Sydney Waterlow, Sir Matthew Ridley, Mr. Holms, Mr. Brodrick, Mr. Torrens, Sir Henry Holland, Mr. Bryce, Sir James McGarel Hogg, Mr. Cropper, Viscount Emlyn, Mr. F. Buxton, Mr. A. Balfour, Mr. Hastings, Mr. Rankin, Mr. Brand, Mr. Leamy, The O'Donoghue, Sir R. Cross. Later on Mr. Hollond's name was substituted for that of Mr. Brand, and in 1882 Mr. Justin McCarthy was added to the Committee. The Committee met very frequently during 1881 and 1882, and examined many of the medical officers of health of the metropolis, some of the officers of the Metropolitan Board of Works, several of the clergy of East and Central London, representatives of the London Trades Council and other working men, and certain

ladies and gentlemen who have themselves attempted to meet the difficulties of the case, including the Hon. Maude Stanley and Miss Octavia Hill. The Committee also personally visited several of the areas condemned as unhealthy by the Act of 1875. The result of their deliberations and investigations is before us in two goodly blue books, of about 600 pages, including, in addition to the reports and papers in the appendices, no fewer than 9,584 questions addressed to the witnesses and their replies. Here it will readily be believed is an accumulation of information on the subject of the very highest value, and calculated to form a trustworthy basis for further legislation.

We will take first the evidence of the vicar of St. Jude's, *Whitechapel*, the Rev. S. A. Barnett, a clergyman well known for his efforts to promote the social and moral elevation of the people, an active guardian of the poor, and a member of the Charity Organisation Society, who is not likely to take a sentimental view of the matter. He handed into the Committee of the House of Commons on the 3rd April, 1882, a list of the occupants of single rooms in a street in his parish, all of whom he stated were "decent working people," paying 2*s.* 9*d.* weekly for an unfurnished room, or 4*s.* 6*d.* for a furnished room. In one case a hawker and his family, numbering eight people, lived in one room; in another, a cocoanut-fibre worker, lived with ten in two rooms, and in answer to the question whether that was satisfactory, Mr. Barnett's answer was "as satisfactory as it can be; the man is a hard-working man." Then, again, a blind singer, whose wife "hawks" occasionally, lives, with seven in family, in one room, and Mr. Barnett's answer to the same query put in the former case was, "It is not what one wants; it is better than living as they did before in a hovel." This, it must be borne in mind, is the state of things now existing after remedial Acts of Parliament have been enforced; until recently the condition of the people was far worse, or, to use the pungent words of the witness, "as bad as one can describe; they were very seldom free from disease; there were all kinds of little fevers about and other diseases; and, morally, the state was too horrible to think of; girls have got ruined there time after time; the children never went regularly to school, and drunkenness was as bad as it could be."

Turning to another district, *Clerkenwell*, we have the evidence of the Vicar, the Rev. John Rose, who, after fourteen years' charge of the parish was examined before the same Committee. This

gentleman declared it to be hardly possible for people to live decently crowded together as they are now in some parts of Clerkenwell, and, in reply to Mr. Torrens, he said that the demoralisation consequent on overcrowding deteriorates the industrial capacity of the breadwinner, and often drives him to the public-house. Speaking of the Italians who live in the same quarter—"chiefly people going about with ice-barrows and organs, and those sort of things"—he said that oftentimes a very large number of them occupy two or three rooms, and seem to live in common; while he pungently added "they spend very few hours in their homes, or else they could not possibly live." In Clerkenwell houses built for one family now have as many as six or seven families living in them without anything that will attract the inspector's notice or attention. In *Limehouse* the medical officer of health, on being reminded that, as stated in the first paragraph of this article, the population, if divided by the number of houses, gave an average of only a little over ten to a house, explained that his reason for describing this as overcrowding was that the houses were sometimes merely cupboards. In one spot the mortality was 50 per 1,000, that for the entire district for the same period being 23·9, and whereas from a sanitary standpoint he considered 300 cubic feet of air for each person was desirable, he found the provision as low as 80. Mr. Liddle, the medical officer of health for *Whitechapel*, quoted a similar enormous rate of mortality in a specially bad district, amounting to 50 per cent. above the average of the entire parish, and added that this figure was *bonâ fide* the result of calculation. Scrofulous diseases, marasmus, tuberculosis, and consumption prevailed, and he attributed them to the want of proper air, ventilation, and light, adding that tadpoles would not develope into frogs unless they got light, and children in the absence of light would be stunted in their growth. Dr. C. Meymott Tidy, medical officer of *Islington*, in describing an area in that parish from which certain houses had at last been removed, said that "they were very old, with no back ventilation; they were practically dropping to pieces, very dilapidated and in as insanitary a condition as it would be possible to believe," and yet before they were removed 504 people were living in the seventy-eight houses in one court. Mr. Samuel R. Lovett, M.R.C.P., medical officer of *St. Giles's*, describing a well-known district of his parish known as Great Wild Street, since dealt with under an improvement scheme, said that it numbered ninety-three houses and 1,679 people in an area

of about one and a half acres—the houses badly ventilated and dilapidated, sodden with filth, and with both fever and death-rates higher than in any other part of the parish. As a result of the remedial action already taken, Mr. Lovett was able to add that the death-rate over the whole area of St. Giles's had been reduced from 25 to 16 per 1,000. Dr. Griffith, the medical officer of *Clerkenwell*, after forty years' attendance on the people in the courts of that parish, expressed the opinion that nineteen deaths every year in each thousand of the population were distinctly due to the overcrowded and insanitary state of their dwellings, and hence were preventible. A still more terrible state of things was reported by Mr. Corner, medical officer of health for *Poplar*, who, in speaking of one condemned area near the East India Docks, said that the mortality in the area was 68·6 per 1,000 in a period of three years, or 22·35 per annum, and that a general degeneracy was going on among the adult population of which the children partook.

Remedies for Overcrowding.

The evidence taken by the Committee of the House of Commons in 1881 and 1882, of which we have given some typical illustrations, points to a state of things which not merely generates physical incapacity and induces a high death-rate, but involves a moral degradation injurious to the whole nation, and contributes inevitably to swell the pauper roll and keep up a constant procession of criminals marching into prison, there to be maintained at the public expense. This being so, the second element in the evidence taken before the Committee has a strong interest in reference to the best means of remedying the evil. The general testimony of the medical men goes to prove that in very many cases the actual demolition of condemned dwellings is the only means of dealing with the case, but this obviously carries with it the extrusion of the tenants. How then are they to be provided for? One answer is by the erection of *Model Dwellings*, but the experience of these buildings up to the present time seems to point to the fact that they are occupied by a class rather above that which formerly inhabited the houses on their sites. Mr. F. W. Goddard, Chief Surveyor to the Metropolitan Board of Works, gave evidence to this effect, judging from "the adornment of the windows and the style of the luxury of the inhabitants and their comfort inside," while he suggested the inference that the managers in the case of the Peabody Build-

ings sometimes receive tenants earning a higher rate of wages than is named in their rules. At the same time he declared his belief that "these dwellings are incident to the moral, social, and intellectual advancement of the people generally." A working-man, Mr. Keating, employed as a silver plater, and living in Newport Market, came forward as an adverse critic of the Model Dwellings, although he admitted that he had never resided in one, because he objected to them on principle. "There are," he said, "too many restrictions in them. Every man's house ought to be his castle. You are supposed to be in at a certain time, and the gas is put out at a certain time, and you must not put a nail in and hang a picture. The working-classes," he went on to say, "are very fond of pictures. I am one of that sort myself; I cannot pass a picture-shop without stopping and looking at them; and consequently I like to have them hung up in my own place. Another thing, I have an idea that they are more like hospitals and barracks; there is not a feeling of home." Very similar testimony was borne by Mr. Thomas Eckford Powell, a bookbinder, who handed in a paper representing the views of the London Trades Council, in which the following representation of the mechanics' view of the Model Dwellings is given:—"The block system of dwellings has not yet found favour with the great bulk of the working classes of London. A strong feeling of disappointment with those of the earlier examples and of dislike to what has been called the barrack-like publicity or gregariousness of the system, and their barrack-like external appearance, has in wide measure developed into a deep and settled prejudice which has certainly not been without various and ample ground for its justification. The bare unplastered walls, the contracted rooms and windows; the painful monotony of the endless whitewash, unrelieved by even the most distant pretence of ornament or of anything whatever to please the eye or mind; the cold, cheerless, uninviting appearance of the approaches and staircases, together with the sense of irksome restraint through the conditions and regulations imposed in some of those early examples of the system, have assisted largely to engender this feeling of hostility and this prejudice, which only a more enlightened and more appreciative policy and practice can hope to eradicate. The individual mechanic cannot be, and will not be, regarded as an unit of a regiment, or of an army, in so far, at least, as his home-life is concerned; his individual tastes and desires must ever form important elements and

factors in every scheme which seeks to elevate and improve, and to be of lasting benefit to his class and to the nation of which the industrial classes form an exceedingly important proportion."

Another working man, Mr. John Field, painter and plumber, who also, it must be observed, had never lived in any of the dwellings, had heard that there was a great restriction on the admission to them, and that "if your children are not vaccinated you cannot get in." His evidence entirely supported the view that their inmates are not the people who lived in the houses formerly standing on the same sites; on the contrary, he believed that "if a thorough investigation took place, you would find that eight out of ten were strangers to the neighbourhood." The same witness spoke very warmly on the cruelty, as he regarded it, of breaking up the homes of the people unless fresh dwellings are first of all provided for them; and he scouted the idea that any money payment would satisfy him—"all the money in the world would not compensate a man who has been ousted from his house and home." Nor would he admit that, even good wages, living in the country and getting up at six in the morning and not returning home till late at night, would be any compensation. The children in such a case could not, he urged, have the care they ought to have; the separation of the bread-winner from the mother and children tended greatly to bad habits, and many hundreds now getting soaked in the morning and perished with cold were led away through having a drop of rum and water when they were wet.

On this latter point of the feasibility of meeting the needs of the persons dispossessed of their dwellings by providing cheap trains to carry them into the country, several strong opinions were expressed. It was admitted by some of the witnesses that the system might suit certain trades; and Mr. Rose, for example, held that the Clerkenwell watchmakers might live away from their workshops because they could make their choice of hours, but in many cases the burden of the tale was all in the opposite direction. Canon Gilbert, speaking of his own Roman Catholic people, cited the case of 2,500 dock labourers, sackmakers, to whom it was essential that they should be near their work on Tower Hill, but who had been driven away by "improvements." The sack-making, he said, was not always brisk, but at times those employed were at work day and night, and if they were displaced and sent to a distance of a mile or a mile-and-a-half, the poor women and girls would have to carry heavy loads on

their heads great distances, with terrible inconvenience to themselves and great fatigue. The Honourable Maud Stanley advanced another forcible argument for re-housing the working people on the spot whence they are displaced, on account of the expense it puts them to in going out to the suburbs in time, money, railway fares, and the cost of food bought away from home. Miss Stanley added that the respectable industrious working men and women in London care very much indeed about keeping their children at home with them, particularly their daughters, who lodge with them and go out to trades, and the parents prefer this to allowing them to go into lodgings on the plan adopted in the northern towns. If they live in the suburbs there is the expense of railway fares for all the members of the family, and great danger to the girls if they are working in the centre of the town and have to come back from their work late at night. Mr. Robert Reid, on the other hand, who described himself as "a surveyor often called in to advise the Metropolitan Board of Works," spoke in favour of the dispersion of working men to the suburbs, where, he argued, there are plenty of empty houses. In reply to a question as to the possibility of the removal to the Outer Ring being merely a transfer of the slum from the centre, he said this was undoubtedly the case, and that a strong hand was needed to destroy insanitary houses. Wherever houses were let in lodgings there should be a competent authority to examine them.

Remedial Legislation.

Thus far we have been occupied with the consideration of the evidence adduced before the recent Committee of the House of Commons, and of the opinions expressed by the witnesses on the efficacy of certain measures already adopted to meet the evils so unquestionably shown to exist in London, and which are, *mutatis mutandis*, to be found not only in other large towns, but in many rural districts. We may now turn with advantage to the recommendations made by the Committee to the House in their Report. And here it may be well to note the question which, as the Marquis of Salisbury said in his article in the "National Review" for October, 1883, some people may be disposed to ask: Whether it is right that Parliament should interfere at all? At the outset, it is obvious that legislation has already settled the point by attempting to meet the case, but the noble Lord adds the cogency of argument to the logic of facts when he

says that as the only proposal in the way of giving assistance has been to give it in the form of loans, it cannot be maintained that loans for public objects are against the practice of the country, because their first effect may be to promote the interest of individuals. He continues:—"Without entering upon disputable ground by quoting Ireland and the West Indies, it is sufficient to recall the advances made by various Governments, but especially by that of Sir Robert Peel, for the extension of drainage in this country. A very large sum was advanced to landlords at an interest which secured the State from loss, but lower than their own credit would have obtained. It was duly repaid, after having done its work. That work was, in the first instance, to increase the rental of the land; in the second, undoubtedly it served the useful purpose of giving employment under the agricultural depression caused by the repeal of the Corn Laws, and of increasing the general production of the country. In the case before us, also, the loan would be justified by imperious considerations of public policy, even if all thoughts of humanity were cast aside. These overcrowded centres of population are also centres of disease; the successive discoveries of biologists tell us more and more clearly that there is in this matter an indissoluble partnership among all human beings breathing in the same vicinity. If the causes of disease were inanimate, no one would hesitate about employing advances of public money to render them innocuous. Why should the expenditure become illegitimate because those causes happen to be human beings?"

Lord Salisbury might have added fresh force to the strong case which many Englishmen will think he has here made out for wise legislative action, by referring to the course recently adopted in Ireland with the full sanction of the Imperial Legislature, and as an illustration it is sufficient to point to the Act passed in the sessions of 1880 and 1881 to enable the Government to grant loans to the people for the purchase of seeds and other produce. Surely if suffering Ireland is to be thus aided from the National Exchequer, there can be no adequate reason why Parliament should not lend a helping hand on a sound and equitable system to the suffering population of another division of the United Kingdom. It is, moreover, an easy matter to reinforce the plea already advanced by showing that such a proceeding would partake of an act of justice, and would not merely be an act of mercy or of self-protection. The evils of overcrowding producing that density of population on

which sanitary prophets base so many of their timely warnings have, as Lord Salisbury reminds his readers, been created in a great measure by Parliament itself. "If London had been allowed to go on as it was half a century ago, many benefits of vast importance would have been lost, but the intense competition for house-room would not have existed, and the reformation of 'rookeries' would have been a much less arduous task. But 'improvements' on a vast scale have been made, and those improvements, in too many cases, have only meant packing the people tighter. New streets, railways, viaducts, law-courts, and other public buildings, made compulsorily under the authority of Parliament, have swept away the dwellings of thousands of the poor; and in that proportion have made the competition more intense for those that remain. Many tenements have let for a high price which, if no artificial compression had been used, would have found no tenant. Under these circumstances, it is no violation even of the most scrupulous principles to ask Parliament to give what relief it can. *Laissez faire* is an admirable doctrine; but it must be applied upon both sides."

All things considered, then, we agree with the Marquis in believing that there would not be any serious conflict on the question whether an advance of public money ought to be expended in providing a remedy if there were any general agreement as to what the remedy should be, and here we naturally look to the Committee's report for guidance.

They do not fail to note the immensity of the undertaking, nor do they under-estimate the value of the efforts already made in the right direction. There is, they remark, ample room for the operation of all existing agencies—for Sir Richard Cross's Acts, 1875–79; Mr. Torrens's Acts, 1868–79; the Public Health and other Sanitary and Local Acts, as well as for private enterprise. Speaking of the Act of Mr. Torrens of 1868 we find that, as originally introduced, it contained provisions for removing houses unfit for human habitation occupied by working-men, and for the building and maintenance of better dwellings, but, as passed, the measure only contained the former provision. In 1879, however, the latter was restored, and gave, in the amended Act, power to the owner of the insanitary dwellings to require the local authority to purchase them. The Act of 1875 had a wider scope, and provided not for dealing with dwellings, but with whole areas wherever the buildings within such areas were so densely inhabited as to be highly injurious to the moral

and physical welfare of the people. This Act we may term the parent of the improvement schemes, with which, as carried out in Greater London by the Metropolitan Board of Works, the ratepayers are familiar. Here, again, an amended Act gave power to the local authority to provide for the displaced dwellers in the condemned areas by erecting tenements not only within the vicinity of the area but in some other place where equally convenient accommodation can be provided. The Acts of 1868-79 travelled another step onward by enabling the authorities to cause houses unfit for habitation, when the owner fails in his duty as to repairs, to be closed and demolished, and subsequently rebuilt, the expropriation of the owner being the last resort.

The Committee having given a lucid exposition of all the statutes, which will be found convenient for reference by any persons who wish to master the subject, proceed to notice the difficulties in the way of carrying out the Acts arising from the necessity of guarding against excessive valuation of condemned property and the compensation for trade profits lost when the businesses carried out in the condemned premises ceased. In compensation for bricks and mortar and land the Committee hold that the value allowed should be based on the actual worth of the materials and site as subject to its evil surroundings, and not as if it were situated in a clear space. In regard to compensation for trade loss they argue that the arbitrator should in all cases consider well whether the trader has not the opportunity of setting up his trade again in the immediate neighbourhood, in which case he would clearly be entitled only to the expenses of removal. In dealing with weekly tenants the Committee recommend liberality, so as to give an inducement to them to move rather than to make it needful for the local authority to resort to compulsion. In all cases they are thoroughly of opinion that no payment should be made till actual removal takes place. In order to save money in the machinery employed in assessing the payments to be made in the way of compensation, the Committee think that provisional awards should be abolished; that a period should be fixed after which no compensation can be claimed; and that the appeal to a jury in matters of compensation which is now allowed when the amount in dispute exceeds 500*l.* should not be allowed except in cases where the disputed amount exceeds 1,000*l.* On the difficulty caused by the excessive cost of land in towns,

the Committee recommend that the requirement that the improvement scheme should provide for the accommodation of *at the least as many* persons of the working classes as may be displaced should be relaxed to a requirement for finding accommodation of from one-half to two-thirds at the discretion of the confirming authority, and effect has already been given to this recommendation by a statute passed in the last session. The Committee insist strongly on the need of speed in replacing the dwellings of the people, and suggest that to this end the work of rebuilding on the cleared areas should be facilitated by simple conditions of sale or lease. The lower story of the new buildings should, they think, consist of shops, a separate entrance in such cases being provided for the artisans who dwell above, and they call attention to the necessity of taking the fullest advantage of the word *suitable* dwellings in regard to the buildings erected. They would, it seems, make this term as elastic as possible, so as to enable the builders to provide special accommodation for the requirements of the particular business of the persons displaced, such as costermongers, &c., and they contemplate the provision of playgrounds for the children on the roof or on the ground below, a plan already adopted in some of the Model Dwellings. They further recommend the enforcement upon other railway companies as occasion offers of the conditions as to the provision of cheap trains now imposed on the Great Eastern Railway Company, to facilitate what we may term working class emigration to the suburbs, and a step in this direction has already been taken in the Cheap Trains Act of the past session, an abstract of which will be found on another page of the present volume. In regard to the Acts of Mr. Torrens, the report recommends the extension of the power which they give to local authorities for the removal of houses which, if not insanitary in themselves, block up courts and alleys, and generally they urge local authorities and the Metropolitan Board to use the powers they possess. The report closes with a specification of certain important improvements in the metropolis, and with a strong recommendation in favour of the consolidation of the existing Acts.

General Conclusions.

The facts are beyond dispute; the remedies are shadowed forth in the Reports of the House of Commons' Committee, and of other bodies which have considered the subject from the

Committee of the Social Science Association appointed in 1866 down to the present time; the only question is whether more complete information is needed before any action on a large scale is taken by the Government. Lord Salisbury in the final paragraph of his already quoted article says, the subject "seems to require an investigation on authority of the real extent and circumstances of the overcrowding that has to be cured," but we are disposed to think that we know enough already to enable us to enforce existing laws, and perhaps to add to them, and at any rate the available information is sufficient to form a basis for the work of the statesman or the philanthropist. If the vestries of London and other places where overcrowding and insanitary dwellings notoriously exist would only put in motion the law as it stands, if all newly erected houses were honestly inspected and fearlessly reported upon by the surveyors and officers of health, and if an Act for the supervision of all lodging houses could be passed at an early date, much might at once be done. But more than this is needed. Men of property ought, as Canon Erskine Clarke suggested in an admirable paper read on this subject at the Derby Church Congress of 1882, "to undertake the duties of landlord in poor neighbourhoods, or to insure a sufficient measure of wise personal supervision by educated, Christian, sympathetic workers, acting as their representatives," and "the success of the plan does not depend on the houses being the property of the superintendent—good yeoman service may be done by any one undertaking to manage a court or group of tenants for the owner." If such a course were taken we agree with the Canon in thinking that "there would be not only improvement in the moral and religious character of the tenants, but material things would amend also, and cleanliness, brightness, health, and order would be found even in what seems now the most hopeless and wretched of the Dwellings of the Poor."

CHARLES MACKESON.

PART II.

ARCHITECTURE AND PUBLIC IMPROVEMENTS, ART EXHIBITIONS, PROVINCIAL CONGRESSES, SCIENCE, MUSIC, PHILANTHROPY, LEGISLATION, STATISTICS, CHRONICLE AND NECROLOGY OF 1882-83.

ARCHITECTURE, 1882-83.

It is rather difficult to chronicle any special progress or movement in one direction or another in the architecture of the past year. The illustrations of new architecture furnished by the streets of London, and supplemented by the illustrations on paper in the Royal Academy and in the various architectural journals, present a good deal that is pretty and picturesque, mingled with a good deal that is commonplace, and seem to run very much on the same lines on which architecture in this country has run for some years past; displaying a general tendency towards following the fashion of the Queen Anne, or, as some call it in a more ambitious phrase, the Free Classic style, diversified by occasional outbreaks of Gothic, showing that here and there is to be found an enthusiast true to his old love.

The west front of St. Albans Abbey, the only west front of a cathedral which has been built entirely afresh in modern days, except the western portion of Bristol Cathedral, has been completed during the present year. With the fact that both are new, all parallel between them unfortunately ends. Whatever may be thought of the suitability of now undertaking imitation of old Gothic work, it must be admitted that, if done, it should be as well done as possible. In this respect, Street's new nave to Bristol Cathedral was a masterpiece. But for the new appearance of the stone, it would really be difficult to distinguish it from work such as might have been done by the original builders of the eastern portion of the cathedral. But then Street, however unpractical in some things, had given his life to understanding mediæval architecture, not only its details but its spirit. The west front of St. Albans has been built by an eminent lawyer, who appears to have been able to persuade those who were in charge of the building that he is more competent to do such a work than people who have spent their lives in studying Gothic architecture, and that his offer to do it at his own expense was a

sufficient guarantee of his knowledge of mediæval style. The result has been an erection which looks like the end of a big dissenting chapel, the details displaying clumsy reproductions of the mouldings and carving of the older portions of the building. If it were a private house, no one would complain of the owner for dispensing with the services of a skilled architectural designer. But in the case of an ancient building which is a national property, and is only held in trust by its custodians, such a "light-hearted" method of dealing with it seems almost a moral as well as an artistic wrong. The mischief is irretrievably done now, and one can only lament over the extraordinary self-assurance on one side and indifference on the other, which have rendered such a maltreatment of a great monument of English architecture possible.

In connection with church architecture on a large scale, a fine and interesting volume has been published during the past year, giving an account of the restoration of Christ Church Cathedral, Dublin, written by the architect for the restoration, the late Mr. Street, combined with a historical account of the edifice by Mr. E. Seymour, who was a good deal concerned in the work of restoration. Mr. Street's essay was almost the last professional work he did before his death, and contains a great deal of matter of much architectural and archæological interest. The restoration was practically a rebuilding of the edifice, as the mediæval architecture had to a great extent actually disappeared under the accumulated dilapidations and patchings of centuries. Street's own declaration is, that "the only portions of the church in which there was anything to interest an architectural enthusiast were the two transepts, the north arcade and wall of the nave, and the two western arches of the choir." There were, however, enough remains of the original work to give plenty of data for suggestions, at least as to what was probably there previously; and some of the processes of induction by which the architectural history of some parts of the fabric was reasoned out, from very slight remaining details, are of considerable interest, as related in Street's narrative.

Church architecture generally does not proceed at the rate at which it once did, when the ecclesiastical revival was still making its effects felt; and the majority of the possible cathedral restorations have now been accomplished. There are, however, some works of interest still going on in connection with several of our cathedrals. One of these arises from the unfortunate circum-

stance of the failure of the tower of Peterborough Cathedral, which has during the year reached so decidedly dangerous a state as to render necessary the taking down and rebuilding of a considerable proportion of it. This was not decided upon without a great deal of consideration, under the advice of Mr. Pearson, the architect of the new Truro Cathedral, who, since the death of Mr. Street and Sir G. Scott, may be considered to be the leading ecclesiastical architect of the day; there was indeed more caution bestowed upon the matter than seemed quite called for, as the dangerous state of the structure was sufficiently obvious, and the centre tower of Peterborough is not after all a very impressive specimen of a mediæval tower, being a weak and tame erection in a late style of Gothic, and not worth so much reverence as to leave the chance of its falling rather than lay sacrilegious hands upon it. In any case, it is understood that it will be rebuilt as before, and as far as possible with the same stones.

The restoration of the ornamental detail of the west front of Lichfield Cathedral is progressing but slowly, the committee being hampered for want of funds. At Lincoln an important improvement has been made by lowering the ground on the west front to its original level, so that the original Norman plinth now appears, and the bases of the shafts do not seem to come straight out of the ground as hitherto. It has been proposed to continue the same work of excavating and re-forming the ground around the north and south sides of the nave adjoining the west front, a plan which will no doubt greatly improve the appearance of the building. The constant tendency of the level of the ground to rise, in a town, by successive deposits of dust and refuse, in almost all cases ends in cutting off part of the base of an ancient building, thereby destroying its right proportions and the apparent solidity of the design; and the Lincoln people, in determining to clear away this accumulation from the base of their building, are setting a good example. At Chester the Dean, Dr. Howson, not long since issued a statement as to the more recent restoration works at that cathedral, and the manner in which the funds had been expended, from which it appears that the whole of the outer wall of the chapter-house has been rescued from a state of danger and decay; the repair of the outer roof of the south transept has been completed, and it is now proposed to finish the vaulting of the east aisle, one bay alone of which was vaulted several centuries ago. The restoration at Chester Cathe-

dral, although in some respects greatly overdone externally (so that the building now resembles a nineteenth century Gothic cathedral), has been a very meritorious and sensible restoration as far as the interior is concerned, as it has consisted almost entirely in removing rubbish which never ought to have been there, or completing work which had been intended but never carried out. Another restoration which has been completed during the year is that of the interesting cathedral of St. Giles, Edinburgh, a building much bound up with old Scottish history. It had been divided and cut up by cross-walls into separate places of worship for congregations of various denominations, and portions of these had been painted and fitted with seatings and ironwork of the most vulgar and commonplace style. The late Mr. Chambers, the publisher, whose name is connected with much useful work, and who had amassed a considerable fortune, undertook the sole charge of restoring the cathedral of Edinburgh to something like its pristine state. A considerable initial proportion of the cost must have arisen from the necessity of buying up the rights of the various congregations accommodated within the building. The work was carried out under the superintendence of Mr. W. Hay, architect, of Edinburgh, under whose direction the plaster was removed from the walls and roof, and the mouldings which had been defaced when the plastering was done were restored; and the massive octagonal piers of the original structure, which had been removed and their places taken by inferior work of more modern date, were restored to the original dimensions furnished by some fragments which were found under the floors. It appears that many of those who had frequented the buildings as worshippers were not by any means pleased at the stripping of the plaster from the walls, and the reduction of them to bare stone; and in this feeling they were much more excusable than some restorers may be inclined to suppose. Except when fine stone was used and finely finished, the mediæval builders themselves did not by any means leave their walls uncovered stone, or intend them so to be left; they were plastered when built roughly, and the plaster often coloured and decorated. The system of taking off all the plaster, leaving the rough stone and filling in the joints with thick mortar-lines (sometimes black) is really a very barbarous one, and is not by any means what the mediæval builders would have intended or admired. From the account which reaches us of the restoration (for we have not seen

the building since the work was complete), something of this kind seems to have been done there; and if so, the objections which appear to have been made about it in some quarters need not be regarded so much as an evidence of Philistinism as of common sense. The project of the new cathedral for Liverpool is still in the air; the projectors of it have not, we believe, been able to fix their minds on the first question, that of site. If it really comes to anything, there is no doubt that the building of another completely new cathedral in this country and in the present day will be a very interesting event, and we do hope that in such a case Liverpool will show sufficient spirit, progress, and enlightenment, to endeavour to embody in its cathedral some original and progressive idea in ecclesiastical architecture, and not be content, like the diocese of Truro, with a mere reproduction, however archæologically correct and learned, of a Gothic cathedral of the mediæval period. Let them give us another and a better St. Paul's; that is what they should aim at.

In regard to St. Paul's itself, it may be noted that the question of the decoration of its dome is approaching a definite point, and before our next year's review comes to be written, some conclusion, at least, on the subject, will probably have been arrived at. The working out of the architectural lines of the design, partly on the basis of the remarkable sketch left by Stevens, is being carried on by Mr. Poynter, who is also designing the greater portion of the figure subjects which form the main interest of the scheme. Sir F. Leighton contributes one or two of the larger designs, but the majority of the figures to be suggested will be by Mr. Poynter. Before very long it may be expected that a full-sized cartoon, representing the effect both of design and colour, will be placed *in situ* for opinion and criticism. The serious and painstaking manner in which the design is being worked out is highly to the credit of those most immediately concerned, and shows how much progress we have made in England in regard to our perception of the importance and difficulty of such a task. It is not so many years since such a problem would have been taken up in a different spirit and with the assurance that any good artistic name would guarantee a satisfactory result; but at the present moment it may be said that those who have most artistic ability are the most impressed with the responsibility and difficulty of the work. During the past session of the Institute of Architects, Mr. R. P. Pullan, whose name is best known in connection with his labours in

Greek archæology in company with and as the assistant to Professor Newton of the British Museum, read an elaborate paper on the subject, mainly in recommendation of his own views as expressed in a design prepared by himself and the late Mr. Heath Wilson. The latter, an Englishman who long resided in Florence, and was distinguished by his studies in elucidation of the work of Michelangelo, and had produced an admirable monograph on that subject, adopted the illustration of the *Te Deum* as the leading motive of his design, and designed the figures to fill the architectural framework supplied by Mr. Pullan. The design was exhibited in London some years since, and also at the Institute of Architects' rooms on the occasion of the reading of the paper. Architecturally it is simpler, more bold, and more effective than that which is being prepared in response to official orders, and has very great merit. It has just been published in lithograph form in a book brought out by Mr. Pullan, under the title "Studies in Architectural Style," and is quite worthy the attention of those who are interested in the subject. Our own feeling is that elaborate figure subjects of a high class are thrown away in such a position as the internal superficies of a dome, high above the eye: few will take the trouble to study works placed in a position so inconvenient for inspection, and those few are not likely to find their efforts to study them adequately rewarded, for the simple reason that pictorial designs so placed cannot by any possibility be properly seen, at all events from the floor of the cathedral: they may serve to give a new incitement for mounting to the "whispering gallery." A design of a class much more simple and more purely decorative in its scope and object would, we surmise, be more to the purpose. While speaking of St. Paul's we may notice also that the question of the unsatisfactory placing of Stevens's great work, the Wellington monument, has excited considerable fresh controversy of late. It is curious that in a memorial which has been addressed to the Dean in respect to this subject, urging the removal of the monument from its confined position in the Chapel, the worst feature of that position was not even alluded to. That it is a very confined one, and that from the nave a great part of the monument is hid by the large wooden screen, is quite true and duly urged; but the worst point of all is that the two grand groups, "Valour and Cowardice," and "Truth and Falsehood," can at present only be seen against the light and with windows behind them; a position absolutely

ruinous to the effect of sculpture, of bronze sculpture especially, which requires all the direct light it can have. At present the groups are only to be seen as black masses in outline against the light. It is impossible that justice can be done to the monument unless it is removed entirely out of the Chapel into a more open position; when the crowning figure, the equestrian figure, can then also be placed on it. An equestrian figure in a church is doubtless unusual; but the whole monument is unusual, and in the best sense; it is one of the few powerful and really original works which modern English art has produced; the designer gave his whole life to it, under circumstances often of great discouragement, and, in fact, one may say, died of it, for his death was probably accelerated by the vexation, annoyance, and anxiety of various kinds which it brought him. It is certainly worth while that it should be completed as he intended, and placed where it can have its full effect.

Among the churches which have been recently built, one of the most noteworthy is that of St. Peter's, at St. Leonard's-on-the-Sea, designed by Mr. James Brooks. This architect's large, plain, and powerfully designed brick churches in London have gained him great reputation as an architect, who disdained mere prettiness and fritter of ornamental detail, and sought to impart to city churches something of grandeur and monumental character without disproportionate expense. In his St. Leonard's church he has allowed himself more play of line, more decidedly picturesque character, and in architectural composition seems to have borrowed some hints from Mr. Pearson, but still retaining the massive and solid character which has always characterised his work. This is a transept church with a low tower, with "saddleback" roof, from which an octagonal lantern and spirelet rises. The whole is completely in the best spirit of mediæval architecture, while keeping clear of mere copyism, and, in fact, presenting considerable originality of treatment. Another very good specimen of modern church architecture in the Gothic style is Mr. J. Sulman's Congregational church at Shanklin, in the Isle of Wight; in a much lighter and more elegant manner than Mr. Brooks's, but also exhibiting true feeling for the essential qualities of Gothic style. Mr. Gilbert Scott's new church of St. John Baptist, at Norwich, is a good specimen of modern Gothic, more "correct" and less forcible than the two named above. Mr. James Cubitt's Church of the Redeemer, at Edgbaston, is an example of some originality, dealing also with Gothic style, but

adopting a wide lantern as the feature at the "crossing," like Ely cathedral on a small scale, instead of the conventional central tower. This plan allows of so much more spacious interior treatment at the central point of a church plan that it is surprising not to see it oftener adopted by modern church architects. Speaking generally, however, church building has been rather quiescent, and most of what has been produced seems to run very much on the usual lines; Gothic being still accepted as the orthodox architecture for churches. This view of the matter will, of course, seem right or wrong according as we regard the church as an institution which is to move with the times, and its buildings as intended to promote the comfort of the congregation in regard to light, ventilation, acoustics, and seating arrangements (not forgetting architectural effectiveness); or as we regard it as essentially an institution deriving its traditions from those of mediæval piety and mediæval ritual; a church of the past prolonged into the present. If we accept the latter view —and many of the clergy and lay members of the church do, of course, accept it—then there is no doubt that the retention of the mediæval form of church is perfectly logical. It is curious, however, to notice how commonly the dissenting bodies, which cannot be supposed to entertain this view of their own denominations, have, nevertheless, accepted the architectural expression of it, and not only worship in mediævally-designed churches, but seem dissatisfied if the mediævalism is not distinctly emphasized. In short, the matter seems to be, after all, one more of fashion than principle.

One application of the mediæval church form on (apparently) practical grounds may, however, be noted in the case of a recent public building—the Dorset County Museum at Dorchester; Messrs. Crickmay and Sons, architects. Here it seems to have been felt that in planning a wide building where plenty of distributed light was required, the division of the width into three aisles by columns, with a clearstorey light above, as in the nave of a church, would best meet the case; and as the columns or piers do not, as in the case of a church, interfere in any way with the view of one special point on the part of an assembled congregation, we here find in such a case the church form of plan presenting itself as more practically suitable than it would be in an actual church. Among the public buildings which are being or are to be erected, about the most important on the *tapis* is the new townhall for Nottingham, for which a large and important

competition took place a short time since. The first premium was given to Messrs. Verity and Hunt, architects of the "Criterion," for a design which was excellent in regard to plan and arrangement, though rather tame in architectural effect; and we have not heard if it is decided yet that the design as premiated is to be carried out. So picturesque a town as Nottingham, with its long, irregular, mediæval-looking market-place, demands a picturesque as well as a convenient building. In the same town the London School Board style (which is quite a marked one) has found its imitators in the case of a board school. Institutions and public buildings, however, like churches, do not seem to be very active just now. The new municipal buildings at Glasgow, which were decided on in a large competition last year, are in progress; this is a very large structure, and will probably be a suitable one in many points, but the design is of a rather cold and certainly not very original renaissance type. Mr. Waterhouse has prepared designs for an extension to Owens College, Manchester, in his usual solid and very practical-looking phase of Gothic, which may be said to be almost racy of the soil of Manchester, where it was first worked out. It is completely in place there; but not so much so when we find it among the old university buildings at Oxford and Cambridge. Another of the same architect's recent buildings is the Turner Memorial Institution, a "home for chronic sufferers," in the outskirts of Liverpool; a solid-looking Gothic building with a circular turret and spirelet rising picturesquely from among its gables. Mr. Waterhouse's large building in Exhibition Road, for the City of London Guilds Schools, is now approaching completion; in it the architect has gone out of his usual track in regard to style, and the building, though not without a generally Gothic appearance, shows in detail a considerable leaning towards the influence of "Queen Anne." It has the general character which all the buildings of its architect suggest, that of common sense and good building, not excluding picturesque effect. Among other town buildings of some size and importance may be named the new offices for the Northern Assurance Company at Aberdeen, by Messrs. Matthews and Mackenzie; a rather powerful-looking renaissance design, the defect of which is that it does not in its details sufficiently show the character of the material, Kenmay granite, in which it is built. Granite is a material so very different in its capabilities from any ordinarily used building stone, that to use it in an ordinary type of design is

throwing away an opportunity of being original, and Aberdeen is not without some admirable examples of special architectural treatment of granite. Mr. Basil Champneys has given the old and once much-loved Elizabethan style another innings in his "Harper Trust" Girls School at Bedford; both this and the last-named building, by the way, show that use of classic details for doorways along with Gothic mullioned style for windows, which is almost becoming a "note" of the architecture of the present day; it is not infrequent of course-in Elizabethan architecture proper, but is coming largely into use now in many buildings which have no other connection with Elizabethan associations.

The whole tendency of architectural style at present is curiously in favour of what may be termed really want of style, or rather the juxtaposition in the same building of details collected from all sorts of styles. We have buildings now in which pure Doric details, such as triglyphs and other ornamental features (of course quite diverted from their true use and meaning in original Greek architecture), are jumbled up with Roman, Renaissance, and even quasi-Gothic features. The idea seems to be that out of this jumble a new style is to be evolved; an idea not very promising, and certainly a very illogical method of attempting to arrive at the proposed end. The subject was specially noticed not long since, in a very ably written architectural paper in "Harper's Magazine," on "Recent Buildings in New York," a paper well worth the attention of those who are interested in architectural development, and which has some interest for English readers, as showing how completely the English fashions in architecture are reproduced on the other side of the Atlantic. The conclusion of the writer is that in the United States, as in England, architectural style is at present in a state of medley, and very little good will be done with architectural design until people come to think more as to what "style" really means; that it is the expression of construction, and not a quality to be arbitrarily affixed to a building by borrowing bits of various styles from all kinds of sources not in the least related to one another. How very much we are influenced by this tendency to mix styles is oddly shown in one little architectural production of the year, a memorial fountain at Swaffham, by Mr. Blomfield, who might have been supposed to be a pure and devoted Gothic architect if one existed among us. But he has here produced a work, pretty in its general design, but presenting all the now too well-known features of

what is called free classic; a canopy carried on classical columns with a fringe of pierced ornament of the Elizabethan "strap work" style standing up round the cornice; a very bad style of ornament, disfiguring an otherwise pretty design, and put there merely for fashion; for it is impossible that any one brought up on Gothic detail can really admire it.

Street architecture, in London at all events, has been undergoing more attention and development lately than any other class of buildings. Among examples which have been completed during the past year is the new front of St. James's Hall. Many people would have valued the change more if it had commenced inside the building, and if the large hall could have been entirely rearranged and remodelled, so as to provide a concert room worthy of London, which the present ill-arranged and uncomfortable room certainly is not. The new front is one of the very few recent examples of street buildings in a pronounced Gothic style; in this case Gothic of a French rather than of an English type; massive but somewhat heavy, and not particularly in keeping with anything in the interior of the hall, the principal decorative features of which are Saracenic in style, or based on Saracenic detail, which was the peculiar hobby of Owen Jones who designed the building. The front has the merit, however, which ought to count for something in these days, of being an example, as far as its outward aspect is concerned, of a building in a homogeneous style with no incongruities of detail. Among other street fronts which are springing up everywhere, we see more and more the tendency to adopt the new brick manner of building, but in some recent examples it is intermingled with granite or stone features such as pilasters. This is the case with one prominent building in Piccadilly, the thoroughfare once sacred to cement and to plain brick in which these new and very red and staring buildings seem like interlopers which are out of their element there. It is not probable that they will have many rivals in Piccadilly at present; building property is of a more stable kind there than in many other quarters, and owners value the very dinginess of their dwellings as a proof of their long "continuance in one stay," and they enjoy having a form of house which they can periodically make as good as new with paint, or against which they may at intervals have elaborate scaffolds erected and indulge in the mild luxury of re-pointing the joints of the brickwork from base to cornice. Citywards stone building still holds its place to a considerable extent; City owners are not so æsthetic as West-

Enders, and there is a look of solid value in stone which suits the expression of commercial prosperity. One of the most noticeable of the recent buildings in the more easterly direction is the "Courts of Justice Chambers" opposite the Law Courts, designed by Messrs. Wimble and Cuthbert. It is a very boldly treated classic building, in French renaissance style, but with much deeper projection and recessing of pilasters and openings than is usual in that style; a mode of treatment which gives a certain degree of Gothic feeling to it, in spite of the classic detail. The building is very elaborately finished and fitted internally, Doulton's tiles and ware being largely used in the decoration. In point of style it looks an odd neighbour to the Law Courts, but it is not tame or commonplace. In the City proper there is a fair amount of new building in progress; and in Whitechapel, or rather Aldgate, it is gratifying to observe that a beginning has at last been made in driving two new streets and erecting new and better dwellings in part of the crowded and bad neighbourhood immediately north of Aldgate, where whole blocks of tenements have been condemned long since, and have "stood condemned" waiting for operations to be commenced which it was somebody's interest to defer as long as possible. It may be reasonable to ask in connection with this subject, when we are to have the new street through the Seven Dials neighbourhood; a matter which is wanted as a moral improvement as well as from a merely material point, and which has been adjourned, apparently *sine die*. In the Westminster neighbourhood large blocks of buildings continue to rise in the way of chambers and offices; and it is probable that before very long we shall also see the demolition of the block between Parliament Street and King Street, and the end of the latter as a street. The property is in the hands of the Government, and as they have now other schemes in regard to the Admiralty and War Office, for which purposes the property in the King Street neighbourhood was originally acquired, they will probably use this site for offices of a high class also. The rebuilding of George Street must almost inevitably follow sooner or later; but probably that will be deferred, or will defer itself, for a good while yet.

The neighbourhood of Charing Cross and Northumberland Avenue will soon be built up at the present rate. The new Liberal Club premises, or rather the block of buildings named after the club, which itself only occupies a small portion of it,

fills up the angle at the junction of Northumberland Avenue with Whitehall, and the Hôtel Métropôle, presumably intended as a specially French resort, is occupying nearly all the ground in the rear, and appears likely to prove truly a monster hotel. A special style seems to have been developed in this corner of London which might be called the new Charing Cross style ; not that it is very marked or original—rather the contrary—but that in some way difficult to define it seems to express especially the architectural style representing money without culture. Architecturally, this will be, perhaps, the most vulgar corner of London ; a great pity, when we consider what fine opportunities there were for architectural effect, which have been entirely flung away in the production of buildings in the "Grand Hotel" manner. The building of houses in flats is being carried on to a considerable extent ; but we do not seem yet to have arrived at the special treatment, either practically or in regard to architectural design, which the French have evolved in this class of building. The designing of such buildings should be a very interesting problem. They require planning for convenience in each self-contained house, combined with the greatest possible isolation from the others, which means a special construction for sound-proof floors as well as walls ; and their peculiar arrangement might suggest special architectural features on the exterior. Some that have been built are well planned and constructed, but very few present the architectural beauty or finish which one might expect could be realized, considering the very large returns that are obtainable from such property in the way of rent. If the practice of building houses one over the other comes to be further developed in London, as improvements in lifts ("elevators" as the Americans call them) render the number of stories "no object," we might eventually have London a city of towers, towered houses, rising high into the air in place of spreading out upon the ground. There would be some scope for a "new departure" in domestic architecture in that way, with very fine effect. The early mediæval cities of North Italy were all towers, in that case for defence against turbulent neighbours; it would be a curious chapter in the history of architecture if modern cities were again to rise into towers, for reasons not of quarrel but of mutual accommodation and making the most of the ground.

Among the decorative arts directly connected with architecture, a design for a stained glass window may be mentioned,

which promises to be something much beyond the usual style of stained glass designs. This is for a window to be placed in St. Margaret's Church, Westminster, by the Members of the House of Commons, in memory of Lord Frederick Cavendish. The design is by Mr. Holiday, and was exhibited in the architectural room at the Royal Academy, in small coloured drawings and two full-size cartoons. The figures, which represent scenes in the Passion, are of a very fine type, both in drawing and expression, and whenever the window is finished and put up, it is to be hoped it may serve as a precedent for going to artists of Mr. Holiday's ability for such work, instead of being satisfied with the conventional figures which are turned out by so many stained glass manufacturers, and which, apart from the decorative effect of colour, are often nearly worthless in regard to any special artistic value or expression. In the same room at the Academy, a drawing called attention to the fact that St. Peter's, Vere Street, has been entirely refitted with finely executed wood furniture, pulpit, desk, and seating, of considerable elaboration and beauty, designed by Mr. J. K. Colling; this adds another to the numerous examples of the introduction of work that is essentially Gothic in style into a church which is Classical, in as far as it can be said to have any pretensions to architecture at all. A remarkable piece of internal architectural design was the chimney piece in the picture gallery at Cragside (Sir William Armstrong's house), by Mr. Norman Shaw, a massive curved stone "chimney-breast" projecting into the room, and carried at either side on short columns and pilasters of black marble; the front of the stonework is carved with decorative detail of the strap and festoon order, interspersed with figures; the ornament being corrupt in style, but on the whole remarkably picturesque, and showing what an architect of really high-class sketching power can do even in an essentially false style. This bit of work has crossed the Atlantic, for we met with an illustration of it in an American architectural paper the other day, and no doubt there will be people there who will make an imitation of Mr. Norman Shaw's imitation, though we fear not with the same force and effect. Mr. J. D. Sedding's designs for pastoral staves for the bishoprics of Bath and Wells and St. David's were admirable specimens of ornamental work of that class, in gold, ivory, and enamel. Mr. Aitchison continues to make admirable schemes of decoration for the interiors of living-rooms, in which he is the leading light now. His harmonies of colour and

tone are always excellent, and he has the faculty of producing a rich effect without overdoing anything or spoiling the repose which should be the prevalent character of room decoration. It may be admitted that we are beginning to be a little tired of that omnipresent dado; we should be rather glad sometimes to find a room wall decorated without a dado; but such a thing at present would seem almost shocking, one may suppose. As in the case of the Gothic architecture for churches, it is very much a matter of fashion; dados are the fashion now, and no right-minded man will be content without one.

There is one point in connection with an old remnant of architecture which has been touched upon in the House of Commons during the session, viz., as to the stones of the old Colonnade of Burlington House. These, as most people know, are lying decayed and getting chipped and broken, on some ground at the margin of Battersea Park, where they were laid when an enthusiast rescued them from sale by auction as building materials a good many years ago. It was then promised that some worthy architectural use should be made of them; but every now and then a futile question is asked, and the Palladian ruins are left where they were. This is very stupid. They belonged to an historic building erected by an historic man, in a certain sense; for the Earl of Burlington, who put up the colonnade originally, was regarded as an exceptionally learned connoisseur in the arts, in architecture especially, so that there is a certain flavour of association with the æsthetics of a past age which ought to interest the people of this so-called æsthetic generation. It was last proposed to put up the colonnade as an entrance to the exhibition building from Dublin which is to be re-erected in Battersea Park; but such a piece of pure Italian masonic design, as an entrance to a glass and iron building, would be very much out of place; it would, in fact, be throwing it away. It might, however, very well be made an ornamental adjunct to one of the entrances to the park, especially as that class of architectural design blends remarkably well with trees and foliage, as Claude and Gaspard Poussin well knew. It would cost, comparatively, so little to do it, and it is such a lamentable thing to let a fine bit of architecture moulder away merely to save some people the trouble of making up their minds what to do with it, that pressure ought to be put on those who are responsible for the neglect. The indifference to a small matter of that kind, the interest of which is purely artistic, is un-

fortunately only too characteristic of the official and the public mind of this country. We are architectural Gallios, and care for none of these things.

SCIENCE OF THE YEAR.

Astronomy.

The Great Comet of 1882.—Of the comets which have made their appearance in recent years, not one has excited greater interest among astronomers, or given cause for more observation and inquiry than that which from its size and brilliancy is generally called the Great Comet of 1882, or in astronomical nomenclature Comet *b*, 1882. As stated in the article on the "Science for the Year 1881–82," in the previous issue of the "Companion," this comet was discovered by M. Cruls at Rio de Janeiro on September 11, 1882; it soon became a brilliant object in the heavens, where it remained visible to the naked eye in the early morning before sunrise until the middle of February of the present year. In the southern hemisphere it was seen by several observers with the naked eye in full daylight, there being no record of any previous instance of a comet in so close proximity to the sun with the exception of the extraordinary and well-known visitant of 1843. From the first observations made, the computation of the elements of the comet seemed to render it probable that it was the same body which had visited our system in 1843, and again in 1880, but subsequent calculations showed the incorrectness of this hypothesis, and up to the present it has not been identified with any previous visitant. The difficulty of calculating the orbit was greatly increased from the fact of the nucleus of the comet splitting up, first into two, and then into as many as five, separate nuclei, and on October 14, Dr. Julius Schmidt wrote from Athens that he had found near the comet, a body to all appearance a cometary nebula, moving in a path of which the elements correspond so closely with those of the comet itself as to suggest a past connection of the two bodies. This point, however, has never been quite cleared up. Spectroscopic observations of the comet while near the sun reported the spectrum as continuous and very brilliant with many bright lines, especially those attributed to the metal sodium. This

continuous spectrum owed its course to the strong reflected light of the sun, while the bright lines were due to the vapour developed by his intense heat. At a great distance from the central luminary the spectrum approached nearer in character to those of other comets, all trace of the sodium lines having disappeared. In these phenomena, depending on the distance of the comet from the sun, there was much resemblance to those observed in the spectrum of the first Comet *a*, 1882, which was discovered by Mr. Wells at Boston in the United States. Comet *b* was last seen on April 28, 1883, by Dr. J. Schmidt at Athens, and on May 6 by Mr. A. S. Atkinson with a 4-inch refractor at Nelson, New Zealand.

New Comets.—In the course of the year 1883 the first reported discovery of a comet was contained in a Reuter's telegram from Puebla, Mexico, of January 23, but further examination of the part of the sky indicated in the telegram failed to confirm the observation. The honour of discovering the real Comet *a*, 1883, rests with Messrs. Brooks and Swift of Rochester, New York, who found it on February 23 in the constellation Andromeda. The elements of this comet were computed from observations made by Dr. Hepperger at Vienna, and Prof. Milloswich at the Collegio Romano in Rome, and were found to have but little similarity to those of any comet previously calculated. When first discovered it was rapidly receding from the earth as well as from the sun. Its spectrum was observed by Professor A. Ricco at Palermo, who found it to be formed of the three hydrocarbon bands; the spectrum of the nucleus was continuous, the sodium line not being present.

No further discoveries of comets in this year are reported until the month of September, when from a Dun Echt circular we learn that Mr. Brooks on September 2 found a suspicious object, which was further observed by Mr. Wendell at the Harvard College Observatory, and proved to be a comet; it is described as circular in form, less than 1 inch diameter, with a well-defined nucleus, but no tail.

D'Arrest's Comet.—The comet discovered by Professor D'Arrest in 1851 at Leipzig may be expected to make its appearance in the course of the present year, between the months of April and November. It will, however, be probably in an unfavourable position for observation, and only to be commanded by the largest telescopes. According to the calculations of M. Leveau, of Paris, who at its periodical return every six years has devoted

great attention to this body, it should not arrive at perihelion until January 13, 1884. On the occasion of its last visit in 1877 it was seen by M. Coggia at Marseilles, and by Dr. Tempel at Florence. On April 4 of the present year it was announced that Dr. Hartwig at Strasburg had picked up the expected visitant near the position indicated by the elements computed by M. Leveau. It was remarked at the time that it was almost impossible for a comet of short period to be observed at the great interval of 285 days from the date of its perihelion passage, and the doubt was set at rest by the receipt, by Lord Crawford at Dun Echt, of a telegram from Dr. Krüger, the Director of the Observatory at Kiel (the central station to which the announcement of astronomical discoveries is generally telegraphed), to the effect that the object observed by Dr. Hartwig was not D'Arrest's comet, but a new nebula. Up to the time of writing these lines no notice of the comet having been really seen has been received.

Minor Planets.—In the "Companion" of last year it was mentioned that up to the close of the year, 231 of those small satellites of the sun, the planetoids or minor planets, were known to be members of our solar system. Since that time three more have been discovered. No. 232, a minute star of less than the 12th magnitude, was found on January 31 of this year by Dr. J. Palisa at Vienna, and named by him *Russia*. On May 11 M. Borrelly at Marseilles observed another planetoid of the 11th magnitude, and this therefore bears the number 233. The third, No. 234, was discovered on August 13 by Professor C. H. F. Peters, at Clinton Observatory, New York; considering that this latter body is stated to have so comparatively large a magnitude as the 9th, it seems strange that it should have remained so long unknown. The small planet No. 227, discovered by M. Paul Henry last year, has been named by him *Philosophia*, and the name of *Athamantis* has been given to No. 230, which was discovered by Dr. De Ball at Bothkamp.

Transit of Venus.—The great astronomical event of the year, the passage of the planet Venus across the solar disc on December 6, 1882, was successfully observed from many points of the earth's surface. Great preparations had been made for obtaining correct observations of the phenomenon, and there is every reason to believe that a mass of valuable data has been obtained for the determination with greater accuracy of the distance of our planet from the sun. The places where observations could be taken best adapted for the investigation of the problem were

situated nearly on two lines drawn across the map of the world; one of these passes from the South-Eastern States of America through the West Indies to the neighbourhood of the British Colonies in South Africa, the other from the Central States of America across the Pacific to New Zealand and the southern shores of Australia. Accordingly the British Government appointed the English observers to occupy stations at Jamaica, Barbados and Bermuda; at the Cape of Good Hope, Durban (Natal), Madagascar, and Mauritius; at Wellington (New Zealand), Brisbane, Sydney, and Melbourne. In some of these places the Government and private observatories were able to furnish a staff of trained observers; to others it become necessary to send out special expeditions equipped with the requisite instruments and appliances. Most of the other Governments of Europe, with the exception of Italy, Austria, and Russia, also sent out observing parties to other places where the most favourable observations could be taken. The Germans occupied stations in Connecticut and South Carolina (United States), Costa Rica, and near the Straits of Magellan; the French took up positions in Florida and Santa Cruz, Carmen de Patagona, and on the Rio Negro; the Danish observers were stationed at St. Thomas, in the West Indies; Spain sent two parties to the Havannah and Porto Rico. In America, the astronomers of the United States, in addition to favourable positions in their own country, occupied stations in the Cape Colony and New Zealand; the Brazilian Government stationed parties at Pernambuco and Santiago di Cuba; and the Argentine Republic had a special observatory at Buenos Ayres. Most of the observers reported the appearance of a luminous ring surrounding the planet, which is supposed to indicate that Venus has an atmosphere like the earth; and in America, Professor Langley and others noticed a curious phenomenon in the shape of a small patch of light near the limb outside the sun when the planet was half way on the sun's disc. This patch, which is quite distinct from the luminous ring above alluded to, has not yet received an explanation, but it appears to have been the only new feature of the transit of 1882. Spectroscopic observations revealed some unknown or unrecognised lines, and there is a suspicion of watery vapour in the planet's atmosphere. A supposed satellite of Venus was carefully sought for, but no trace of such a body could be found.

The Solar Eclipse of 1883.—On May 6, 1883, a total eclipse of the sun took place, but those who proposed to witness this

interesting event had a very limited choice of stations from which to make their observations, as the course of the central zone of the moon's shadow over the earth was almost entirely a sea track, and only touched land at one or two of the smaller islands of the Marquesas group in the Pacific. Owing to the respective positions, but rarely realised, of the sun and moon, it was known that the duration of the solar occultation would be of unusual length, and an extraordinarily favourable opportunity would therefore be afforded for the observation of those phenomena peculiar to an eclipse which promised to throw so much light on the nature and constitution of the sun's atmosphere. Expeditions were organised in England, France, and America for the purpose of observing this eclipse. To the American party, under the leadership of Professor Holden, the English observers, Messrs. Lawrence and Wood, assistants in the work of the Solar Physics Committee, were attached; the French expedition consisted of MM. Janssen, Trouvelot, Palisa, and Tacchini. All these expeditions established themselves and their instruments at Caroline Island, one of the Marquesas group, a low-lying chain of coral reefs enclosing a central lagoon. Fortunately, after much wet weather, May 6 turned out a favourable day for the purpose of the observers; many successful observations were made, and a large number of spectroscopic and other photographs secured. A distinguishing feature of this eclipse was the almost entire absence of prominences, but the corona was well seen, and Mr. Dixon, of the American party, made a careful sketch of the solar appendage showing five well-defined streamers. Dr. Hastings, a member of the American expedition, deduces, as the very interesting result of his observations, that the corona is a phenomenon largely due to diffraction. At the meeting of the British Association at Southport, in September of this year, Professor Janssen described the results he had obtained by an improved method for observing the spectrum of corona during the eclipse. He found it to be a very complicated spectrum with many dark lines, indicating the existence in the corona of matter capable of reflecting the solar light. He also verified the fact that the coronal light is strongly polarised, and he comes to the conclusion that the corona appeared to have a definite limit at no very great distance from the sun. No trace was found of the intra-Mercurial planet Vulcan, although diligently sought for.

Spectroscopic Investigations of the Corona without an Eclipse.—

An attentive examination of the photographs of the coronal spectrum taken by Dr. Schuster at the solar eclipse of May 17, 1882, has led Dr. Huggins to the conclusion that similar results might be obtained under ordinary conditions of solar observation, without waiting for an eclipse to make the corona visible to the eye. He first attempted to realise this object by interposing a violet-coloured glass between the object-glass of the telescope and the sensitive plate, so as to isolate the light of the sun in the violet part of the spectrum, and the results he thus produced were, in the opinion of many competent authorities, attended with great success. He obtained an over-exposed map of the sun itself with the structure of the corona distinctly visible round it. More recently Dr. Huggins has improved upon this method; he now uses a reflecting telescope and a film of silver chloride as the sensitive plate on which the photograph is taken. Plates of this description are sensitive to violet light only, and the necessity is thus obviated of using absorbing media to sift the light, which in the first method was found to be the cause of much difficulty. The photographs taken by the second method show details which agree well with those of the photographs taken at the late solar eclipse, and one of the observers sent to Caroline Island writes that Dr. Huggins's photographs are certainly genuine up to 8′ from the sun's light.

Geography.

East Africa.—A fresh expedition for the exploration of that part of the African continent lying between the east coast and the Victoria Nyanza, and to open up a direct route from Zanzibar to the lake, has been organised by the Royal Geographical Society. The expedition has been placed under the leadership of Mr. Joseph Thomson, who three years ago so successfully conducted an exploring party to the northern shore of Lake Nyanza, and from thence to the western side of Tanganyika and the country of the Lukuga. Mr. Thomson left England for Zanzibar on December 13 last, and on his arrival found that his object had to a certain extent been forestalled by a German expedition under Dr. Fischer, a former companion of the Messrs. Denhardt in their exploration of the River Dana, who was already at Pangani organizing a party of 300 men, intending to proceed to Mount Kenia by a route south-west of the snow-covered Mount Kilimanjaro,

interesting event had a very limited choice of stations from which to make their observations, as the course of the central zone of the moon's shadow over the earth was almost entirely a sea track, and only touched land at one or two of the smaller islands of the Marquesas group in the Pacific. Owing to the respective positions, but rarely realised, of the sun and moon, it was known that the duration of the solar occultation would be of unusual length, and an extraordinarily favourable opportunity would therefore be afforded for the observation of those phenomena peculiar to an eclipse which promised to throw so much light on the nature and constitution of the sun's atmosphere. Expeditions were organised in England, France, and America for the purpose of observing this eclipse. To the American party, under the leadership of Professor Holden, the English observers, Messrs. Lawrence and Wood, assistants in the work of the Solar Physics Committee, were attached; the French expedition consisted of MM. Janssen, Trouvelot, Palisa, and Tacchini. All these expeditions established themselves and their instruments at Caroline Island, one of the Marquesas group, a low-lying chain of coral reefs enclosing a central lagoon. Fortunately, after much wet weather, May 6 turned out a favourable day for the purpose of the observers; many successful observations were made, and a large number of spectroscopic and other photographs secured. A distinguishing feature of this eclipse was the almost entire absence of prominences, but the corona was well seen, and Mr. Dixon, of the American party, made a careful sketch of the solar appendage showing five well-defined streamers. Dr. Hastings, a member of the American expedition, deduces, as the very interesting result of his observations, that the corona is a phenomenon largely due to diffraction. At the meeting of the British Association at Southport, in September of this year, Professor Janssen described the results he had obtained by an improved method for observing the spectrum of corona during the eclipse. He found it to be a very complicated spectrum with many dark lines, indicating the existence in the corona of matter capable of reflecting the solar light. He also verified the fact that the coronal light is strongly polarised, and he comes to the conclusion that the corona appeared to have a definite limit at no very great distance from the sun. No trace was found of the intra-Mercurial planet Vulcan, although diligently sought for.

Spectroscopic Investigations of the Corona without an Eclipse.—

An attentive examination of the photographs of the coronal spectrum taken by Dr. Schuster at the solar eclipse of May 17, 1882, has led Dr. Huggins to the conclusion that similar results might be obtained under ordinary conditions of solar observation, without waiting for an eclipse to make the corona visible to the eye. He first attempted to realise this object by interposing a violet-coloured glass between the object-glass of the telescope and the sensitive plate, so as to isolate the light of the sun in the violet part of the spectrum, and the results he thus produced were, in the opinion of many competent authorities, attended with great success. He obtained an over-exposed map of the sun itself with the structure of the corona distinctly visible round it. More recently Dr. Huggins has improved upon this method; he now uses a reflecting telescope and a film of silver chloride as the sensitive plate on which the photograph is taken. Plates of this description are sensitive to violet light only, and the necessity is thus obviated of using absorbing media to sift the light, which in the first method was found to be the cause of much difficulty. The photographs taken by the second method show details which agree well with those of the photographs taken at the late solar eclipse, and one of the observers sent to Caroline Island writes that Dr. Huggins's photographs are certainly genuine up to 8′ from the sun's light.

Geography.

East Africa.—A fresh expedition for the exploration of that part of the African continent lying between the east coast and the Victoria Nyanza, and to open up a direct route from Zanzibar to the lake, has been organised by the Royal Geographical Society. The expedition has been placed under the leadership of Mr. Joseph Thomson, who three years ago so successfully conducted an exploring party to the northern shore of Lake Nyanza, and from thence to the western side of Tanganyika and the country of the Lukuga. Mr. Thomson left England for Zanzibar on December 13 last, and on his arrival found that his object had to a certain extent been forestalled by a German expedition under Dr. Fischer, a former companion of the Messrs. Denhardt in their exploration of the River Dana, who was already at Pangani organizing a party of 300 men, intending to proceed to Mount Kenia by a route south-west of the snow-covered Mount Kilimanjaro.

To avoid treading on the heels of this expedition Mr. Thomson determined to travel from Mombasa on the coast by a road passing along the north-east shoulder of Kilimanjaro, in the direction of Kavirondo, on Lake Victoria. He started from Mombasa on March 15, having succeeded in engaging a party of 149 men as guards and porters, and on March 31 reached Taveta, where he had to spend twelve days, preparing the beads and iron wire he had brought with him as merchandise, so as to be available in bartering with the natives. Here he found that Fischer had changed his proposed route, and was now entering the Masai country by the same road that he had himself intended to follow. On April 29 Thomson arrived at Kibonoto, on the frontier of the Masai country, and learned that the German party, some two days ahead, and united with a large trading caravan proceeding in the same direction, had been engaged in a fight with the inhabitants, the fierce and redoubtable tribe of the Masai, who, being worsted in the contest, and unable to oppose any effective resistance to the well-armed and numerous party of Dr. Fischer, determined to wreak their vengeance on the peaceful and comparatively weak expedition following in its wake. Under the pretence of *hongo* or presents to the chiefs and their principal followers, Mr. Thomson had also been robbed of some of the most valuable and useful of his possessions, and, under these circumstances, was compelled to return as quickly as possible to Taveta, with the hope of starting again towards the interior so soon as he could find an Arab caravan with whom to travel. By the latest tidings from Zanzibar it appears that Mr. Thomson had arrived on July 2 at Taveta, and had there met with a caravan from Pangani, in whose company he would be able to travel *viâ* the north side of Kilimanjaro as far as Mosira. He was to leave Taveta on July 8, "sanguine as ever."

Central Africa.—The indefatigable explorer Dr. Junker is still in the country on the banks of the Welle, determined to solve the problem of that mysterious stream. He has discovered the Bornokandi, a large tributary of the Welle from the southward, and he has heard of, though not actually visited, a large lake to the south of the regions already explored by him, which, if its position is correctly given, cannot be more than a hundred miles to the north of the main stream of the Congo. The existence of this lake in the basin of the Welle is also referred to in a report communicated to the Geographical Society by Mr. F. Lupton, a young Englishmen recently appointed by the Egyptian Govern-

ment to the post of Governor of the Bahr-el-Gazal district in Central Africa. Dr. Junker now believes that the Welle is not, as he formerly supposed, identical with Stanley's Anwimi, a tributary of the Congo, but that it discharges itself into Lake Tchad. Altogether, as the President of the Royal Geographical Society asserts in his annual address of June last, "We are probably on the eve of some exciting discovery in this part of Africa, which is at present a blank on our maps."

A Journey across the African Continent.—Another successful journey across the central regions of Africa—this time from the west to the east coast—has been accomplished by Lieutenant Wissmann, of the German African Society's expedition to Western Africa. In company with Dr. Pogge he started from St. Paul de Loanda in January, 1881, and advanced into the interior with the object of first visiting the capital of the renowned Central African potentate the Muata Yanvo. It was the discovery of this place in 1875, and the account he brought back of the up to that time unknown chief, which first won notice for Dr. Pogge as an intrepid and able explorer. The two travellers, however, found the road they proposed to follow closed against them by the incursions and wars of border tribes, so that they were compelled to turn to the north, and on October 2 arrived at Kikassa on the Kasai, a tributary of the Congo. Here they again turned to the east, and traversed a wide tract of new country, lying to the south of the Congo, and watered by numerous tributaries of that great river.

They describe this region as being densely populated by tribes who, for the most part, were friendly, although unacquainted, with white men. One of these tribes, the Basonge, Lieutenant Wissmann speaks of as industrious and highly skilled in all kinds of industrial art; another, the Beneki tribe, are an industrious people, very numerous and well to do, some of whose villages took four or five hours to march through, although they consisted of two or three rows of houses or streets. At the Lomami, also a tributary of the Congo, they turned again to the north, and crossing Cameron's previous track they arrived on April 17th, 1882, at Nyangwe, the great mart on the Congo, where both Cameron and Stanley spent some time.

At this place the fellow travellers separated, Dr. Pogge returning again by nearly the same route to found a station at Makenge's on the Lulua, where it is understood he has arrived safely, while Lieutenant Wissmann continued his route along

the Lukuga to Tanganyika. He crossed the lake to Ujiji, and finally reached the territory of Zanzibar, at Saadani, on November 15, having spent twenty months and a-half in his journey from the west to the east coast.

The Congo.—Now that Mr. H. M. Stanley has so successfully opened up this great outlet of Central Africa, and has, by his own untiring energy and the help of the King of the Belgians, made a practical road along the river for trade and geographical discovery into the interior, other people are anxious to enter into the fruits of his labours. Not only do the Portuguese assert their claim to the possession of the whole of the coast through which the stream empties itself into the ocean, but M. de Brazza annexes in the name of France a large strip of territory on the banks of the river at Stanley Pool, and so effectually prevents any other persons not devoted to French interests from settling there. Mr. Stanley, however, still proceeds with his enterprise in his own way. By the latest news from him he has now succeeded in establishing eight principal stations along a stretch of the river extending 700 miles from the mouth, and he is busily engaged in exploring with the help of a steamer which he has launched on the upper waters of the Congo, the tributaries of the great stream. Up the Kwango, one of the largest of these affluents, he some time ago discovered a great lake to which he gave the name of Leopold II; more recently about thirty miles from this lake he has found another, to which he leaves its native name, Mantumba.

After all this has been done, however, the most accessible way to the centre of Africa is by the east coast, as for 300 miles between its upper and its lower waters the Congo is impassable owing to rapids and falls. From the east the traveller can go by steamer up the Zambesi to the north end of Lake Nyassa, thence by road to the south of Lake Tanganyika; again by steamer across that lake to its outlet, the Lukuga, and once more by road to Nyangwe on the Congo.

Polar Meteorological Stations.—As described in the article on "Science of the Year 1881–82" in last year's "Companion," expeditions have been organised by various countries for the purpose of founding stations for scientific observations within the North Polar Circle. Ten of these stations had been planned, and some of the expeditions reached their destinations in safety. All the expeditions were under orders to return to their respective countries in the summer and autumn of 1883, and, with the

exception of those hereinafter mentioned, it is understood they have all done so.

Reckoning them in their order from west to east, the first of these stations is the one founded by the Austro-Hungarian party under Lieutenant von Wohlgemuth in the steamer "Pola." This expedition landed on the Island of Jan Meyen on the 13th July, 1882, and having remained there the winter, returned August 19 of the present year to Hamburg; the explorers bought home with them a large quantity of natural history specimens and photographs, and express themselves as highly pleased with the results of their meteorological and other observations. (2) The Norwegian expedition was stationed at Bosekop in Lapland, and commenced operations on August 1, 1882. (3) Somewhat later Mr. Ekholm, the commander of the Swedish expedition, fixed his station at Ja Fiord in Spitzbergen, and began to take observations on August 15. On July 4 last, he was able to communicate with home, and described all the members of the expedition as having throughout enjoyed excellent health. (4) Russia established two stations, one under Lieutenant Andreief in Möller Bay, Novaya Zemlya; (5) the other under Lieutenant Jürgens on Sagastyx Island at the mouth of the Lena. It is proposed that these two expeditions should pass another winter at their respective stations.

The United States of America also sent out two expeditions, both in the summer of 1881, so that the observers have already spent two winters in the Polar region. (6) The first of these under Lieut. Ray was settled at a station near Point Barrow; it has since been visited and relieved. (7) The English station is at the Great Slave Lake. (8) From the eastern station of the United States no tidings have been received since the explorers took up their quarters in 1881. This, which is under the command of Lieutenant Greeley, is the northernmost of all the International Meteorological stations. It is situated in 81¼° N. lat., close to the spot where Nares wintered on the coast of Smith's Sound, Lady Franklin Bay. An attempt was made last year to communicate with this party, but unfortunately the relief ship "Neptune" was unable to pierce the ice-obstruction in Smith's Sound. This summer a strong endeavour will be made to relieve Mr. Greeley and his men; the steamer "Proteus," accompanied by the United States war-ship "Tantic," has been sent to Lady Franklin Bay, and should the condition of the ice again be unfavourable, the relief expedition will be put ashore at a certain

point on the east coast of Smith's Sound, and the "Proteus" will return. It is hoped that the two expeditions will be able to communicate with each other, and next summer a vessel will be despatched from the United States to bring them both home. (9) The German expedition is commanded by Dr. Giese, and is stationed at Cumberland Sound in Davis Strait.

The tenth station for which an expedition was sent out in the "Varna" under the leadership of Dr. Snellen by the Government of the Netherlands, was to have been found at Dicksonshavn at the mouth of the River Yenisei; the ship, however, never reached its destination, having been frozen up for the winter in the ice of the Kara Sea. Another expedition was despatched from Denmark in the summer of 1882 in the "Dijmphna," commanded by Lieutenant Hovgaard; this officer's object was to follow in the track of Nordenskjöld, with whom he served in the "Vega," along the coast of Siberia as far as Catu Chelyuskin, and to ascertain whether Franz-Josef Land extends to the neighbourhood of that promontory. Equally with the "Varna," nothing had been heard of the "Dijmphna" since September of last year. It was hoped that the "Willem Barentz," which in 1883 started for the sixth time for the Arctic seas, with special instructions to cruise in the Kara Sea, would be able to communicate with and succour both the missing vessels; this expedition failed, as the Dutch exploring vessel returned without finding any trace of them, and without learning anything from the Samoyedes on the coast of Siberia. At the end of August, however, a telegram from Vardoe conveyed the welcome news of the safety of both expeditions. The steamer "Obi" had arrived at that port, having on board all the members of the Polar Expedition; they were picked up near Waigatz, their ship, the "Varna," having foundered on July 24. They also brought tidings of the "Dijmphna" which had been icebound in the same region throughout the winter; all, however, were well on board, and her commander felt confident of soon geting into open water.

Exploration of Greenland.—The famous Arctic explorer Nordenskjöld has organised during the present summer an expedition of great difficulty and danger to a part of the Arctic regions of which, up to the present, but little is known. Abandoning the idea which he had entertained of revisiting and prosecuting further researches in the Siberian Sea—especially in face of the expectation that the Danish expedition in the

"Dijmphna" would be doing the same work there this year—he determined now to engage in the solution of a problem which he had for some time previously kept in view. It is generally supposed that Greenland is an icy waste, a country, in fact, covered by glaciers of immense thickness, much as the northern and central parts of prehistoric Europe must have been during the glacial period. From observations made during a former journey to Greenland, and from traces discovered by one of the German expeditions, Nordenskjöld inferred that oases exist in the midst of these fields of ice. Another object of this celebrated explorer was to discover, if possible, traces of the old Norse colonies of the middle ages which are supposed to have been destroyed in the fourteenth century by an invasion of the Esquimaux after a flourishing existence of 300 years.

Nordenskjöld's expedition, of which Mr. Oscar Dickson, the munificent and indefatigable promoter of all Arctic enterprise in Sweden, bore the cost, sailed from Gothenberg in the steamer "Sophia" on May 23 of this year. Having spent some days at Reikjavik, in Iceland, the expedition made for the west coast of Greenland, and on July 4 landed an inland ice party at Anleitswik Fiord. This party, having penetrated about 70 miles east of the glacier border, and attained a height of 5,000 feet, were prevented by soft snow from proceeding in sledges, but some Laplanders belonging to the expedition were sent on further on snow-shoes. These advanced more than 100 miles further in the same direction to a height of 7,000 feet, over a continuous snow desert. The rest of the expedition, under the command of Dr. Nathorst, visited the north-western coast of the island between Waigattel and Cape York, and succeeded in bringing away valuable zoological, botanical, and geological collections. On August 16 the whole expedition sailed from Egedesmunde for the south, and doubling Cape Farewell endeavoured to run to the north along the east coast, but they were unable to effect a landing on account of the ice along the shore. On September 4 the "Sophia" anchored in a fiord where were found some remains from the Norseman period; this was the first time since the fifteenth century that a vessel had succeeded in anchoring on the east coast of Greenland south of the Polar Circle. The expedition then returned to Europe, arriving at Reikjavik on September 9, and at Thurso ten days later.

Baron Nordenskjöld, as the result of his exploration, concludes

that the conditions of a snow-free interior do not exist in Greenland, at least not in that part now visited, although his men penetrated further into the island than has ever yet been done. The whole of the region traversed was a desert of ice; no open water, nor anything like an oasis was met with.

Biology and Palæontology.

The discovery made by Dr. Koch as to the origin of consumption, and the careful manner in which he has worked out the development of the organism which is the cause of this fatal disease, have led to increased study of these microscopic forms of life. Much additional light has been thrown on this obscure subject during the past year, and the results at present obtained were ably summed up in the address of Dr. Creighton, on the autonomous life of specific infections, at the recent meeting of the British Medical Association at Liverpool. One of the most interesting problems connected with this subject is to ascertain what methods are best adapted for either fortifying the human frame against the attacks of these bacilli, or destroying them when they have effected a lodgment in the system. Koch and Pasteur have both adopted inoculation with a modified or milder form of the specific virus in order that the lesser form of the disease may serve as a defence against the more severe. This is what is already done in vaccination, where the comparatively harmless cow-pox serves as a subsequent protection against the more deadly small-pox. The other line of inquiry is to discover under what conditions these bacilli can be destroyed or rendered inert without harm to the animal whom they may at the time be inhabiting. The action of various drugs on different kinds of bacilli has been noted, and already in one case this line of experiment has yielded a distinctly useful result. It has been lately shown that ammoniacal decomposition of the contents of the bladder may be due to a specific form of bacillus, which is destroyed by a solution of quinine (a drug which is without effect on most other bacilli). As quinine has no harmful action on the bladder, a patient can be effectually relieved by an injection, which speedily kills the minute originators of the disease.

Rhythmic Contraction of the Spleen.—Dr. C. S. Roy has discovered that the spleen, like the heart, is a rhythmically contractile organ; that is, it undergoes a definite expansion and

contraction in regular intervals of time. The effect of this alternate movement is to promote a current of fluid through the organ, and thus act a similar part to that played by the heart in the circulation of the blood. The force with which the spleen contracts and expands is, however, very much less than that exerted by the heart, and the time taken by a complete systole and diastole is longer, having been noted by Dr. Roy as about once a minute, whereas the heart makes an average of seventy or eighty beats in the same time.

During the year Biology has lost the services of Dr. Hermann Müller, of Lippstadt, whose work on the fertilisation of flowers had rendered him the greatest authority in this department of botany. The English translation of his book on this subject, which has been published during the past year, contained a preface by Charles Darwin, being the last contribution he ever wrote for the press. Medical skill has received official recognition during the year in honors accorded to the distinguished names of Prescott Hewett, Andrew Clark, T. S. Wells, and Henry Pitman, but rewards of this kind are not especially calculated to advance the cause of pure science. At the late meeting of the British Association Professor Ray Lankester compared the provisions made in this country and in Germany for the encouragement of original work in biology. Whereas England has at the outside between thirty and forty posts which enable their fortunate possessor to devote part of his time to something beyond mere teaching, there are in Germany nearly 300 such positions distributed over their twenty-one universities. The result is that English men of science, with the exception of the few favoured by the possession of private means, are hampered by the necessity of devoting their talents to the more remunerative professions. Professor Lankester suggested that the Gresham College funds might with advantage be reorganised to serve the purposes of research.

Movements of Plants and Animals.—Professor Burdon Sanderson has lately shown that the mechanism of plant motion differs from that of animals not in difference of quality in the fundamental chemical processes of plants and animals, but only in the different rate or intensity with which these processes are conducted. Both are due to the expenditure of force stored up by chemical action, and work done is due to the conversion of chemical compounds into other forms; but in the plant this force is accumulated by the gradual coiling up of springs, which are

finally released at any required moment by the excitability of the plant when movements are to be produced, whereas in the animal chemical action stores up highly unstable compounds, whose decomposition will supply the necessary force for the motion required. In the animal the contractile protoplasm, as in muscle, does work only when required, and uses its store of materials in doing so; whereas in the plant the use of its store is continuous, and the work done represents not merely what is due to the chemical transformations effected while the mechanism is moving, but that which has been slowly accumulated during previous intervals of rest. There are, however, many cases, as shown in Mr. Darwin's book, "On the Movements of Plants," where the slowness of the movement allows time for the immediate conversion of chemical action into mechanical work, and where there is accordingly no such storage of energy as occurs in the great majority of plants.

Fossil Reptiles.—In 1878 the remains of several specimens of the iguanodon were found at Bernissart, near Tournai. From that time till now M. L. Dollo has been steadily working at their exhumation and description, and he has now, with the assistance of Professor van Beneden, published a preliminary report. He has obtained remains of no less than twenty-three different individuals belonging to two species. The report points out that in many most important peculiarities the fossil reptiles resemble birds, so that the iguanodon furnishes a new connecting link between these now widely separated members of the great vertebrate family. M. Dollo is enabled to corroborate from anatomical considerations the idea thrown out by Professor Huxley, that these gigantic animals walked like birds on their two hind legs, using the forelegs to grasp their food, or for purposes of attack and defence. One of the skeletons has been restored and mounted as far as possible in a natural attitude. In its position its snout is more that 14 feet from the ground, and its length from snout to tail is about 30 feet. These figures will serve to give an idea of the size of this monster. The head is comparatively small and narrow, while the neck is long and slender, as occurs in birds. But one of the most birdlike characteristics in these interesting remains is the presence of series of ossified ligaments lying along the sides of the dorsal spines of the vertebræ. These ossifications serve to bind the dorso-lumbar region into a solid mass, as is found to be the case among birds. In short, M. Dollo comes to the conclusion that the

iguanodon resembles in shape a gigantic duck, with the exception of the tail, which in length and adaptability for use in swimming, is shaped like that of a crocodile. When other skeletons have been cleared from the matrix in which they were found, it is proposed to mount them, at Brussels, in a new museum, specially built for their reception.

Physics.

The Size of Molecules.—Sir William Thomson, summing up our knowledge of the size of molecules in a recent lecture, gives us the result of different lines of inquiries as fixing the limits of size between two-millionths of a millimetre as a maximum, and one hundred-millionth of a millimetre as a minimum. As an inch is nearly twenty-five millimetres, it will be easy to convert these figures into decimals of an inch. The size would then lie between ·00000008 and ·0000000004 of an inch. This has lately been strengthened by the researches of Professors Reinold and Rücker on the thickness of films of soap and water or glycerine. It is well known that if a soap bubble be gradually blown it will as it expands and gets thinner show the colours of the rainbow. If still further expanded these colours will be succeeded by a spot at the top, which by contrast appears black, and the bubble then breaks owing to the loss of cohesiveness due to the excessive thinness of the film. By measuring the electric resistance offered by these films, the two investigators have found their average thickness to be twelve millionths of a millimetre. Again by noting the refractive index of the films and assuming that the amount of this refraction is comparable with thicker masses of the same liquid, a similar result as to their thickness has been arrived at. The smallest thickness measured was seventh millionths of a millimetre. Taking the limits of size given by Sir William Thomson, the film would then contain in a vertical cross-section not less than three nor more than 720 molecules of the substance used for the production of the films. The smallest thickness measured by these methods is at least fifty times less than has been obtained from observations on the scale of colours in Newton's rings.

Electrical Engineering.—After considerable delay, an electrical rail- or tram-way has been opened in the United Kingdom. The line, which is more than six miles long, runs from Portrush to Bushmills, in Londonderry. It is a narrow gauge (3 feet) line

with sharp curves and inclines, the latter being sometimes as much as 1 in 35. This is partly due to the line following the course of the present road, not having been laid out as a regular railway. The dynamos used are driven by turbines, worked by the falls of the River Bush, the current being carried along the side of the line by an underground cable. The amount of fall available is about 25 feet, and the speed attained is as much as 12 miles an hour. This is the longest electric railway at present in existence, and the first which has been made and worked purely as a commercial undertaking. It was opened for traffic by Earl Spencer in September last. Tramcars have also been tried in London by the West Metropolitan Tramway Company. These cars were furnished with accumulators, which were charged by a dynamo at a central station. The weight of these accumulators (as much as 3½ tons) is, however, a serious drawback to their employment, and after a few runs the experiment was discontinued. Messrs. G. Bogle and Co., of Glasgow, are manufacturing electric launches on the pattern adopted by Mr. Clark, but at present their expense is greater than those fitted with other means of propulsion. In their favour it may be said that they are superior to steam launches in the fact that there are no engine-fires to be extinguished if large quantities of water are shipped, and that the machinery would thus continue to work when a steam launch would be rendered useless.

The need of some kind of meter for electric currents, if electric lighting is to be applied to houses as gas is at present, has led to the invention of several kinds of energy meters, which appear theoretically to meet all requirements. They have, however, not met with general adoption at the hands of the various lighting companies.

As in previous years, a large number of new forms of dynamo-electric machines have been brought out. Inventors seemed to have turned their attention to the production of machines which will serve to supply a large number of lamps at once. Of these the most successful novelties are the Ferranti, made by the firm of Ferranti, Thompson, and Ince, and the Gordon, invented by the well-known electrician of that name. They are both specially intended for supplying incandescent lamps in house-lighting, but except in size, they do not differ widely in principle from other forms of dynamo.

The death of Mr. Cromwell F. Varley deprives electrical engineering of one of its foremost workers. Mr. Varley had been

for many years connected with the progress of telegraphy, and many improvements in electrical appliances are due to his wide practical experience, combined with sound scientific knowledge.

The thermo-electric explanation of atmospheric electricity has received additional proof by the discovery of Mensbrugge that every liquid mass of which the surface is expanding or contracting is the seat of an electric current. The presence of electric currents in the contraction of muscle has been long known, but the fact that a ray of light falling on the retina produces a current will doubtless be new to most persons. This effect, due in all probability to the chemical changes produced by the light on the pigment of the retina, was ably shown by Professor McKendrick at the recent meeting of the British Association at Southport.

The death of J. Antoine Ferdinand Plateau, at the age of eighty-one, has removed from the ranks of physicists one who by his careful observation of facts and accurate experimentation had done much to extend the domain of molecular physics. He had the misfortune to lose his eyesight in middle life in the course of some physiological experiments on the action of light; but, like Huber before him, this loss appeared only to stimulate him to continue his researches. We have also to mourn the loss of Dr. William Spottiswoode, the late President of the Royal Society, who was throughout his life a devoted follower of physical science.

Chemistry.

Synthesis of Organic Compounds.—The synthesis of citric acid, which was mentioned two years ago, has now been followed by that of two other compounds which have a more important bearing on future discussions than that of citric acid. The composition of albumen has long been a favourite study with chemists. It has been known that one of its products of decomposition in the animal was a substance known as *tyrosine*. This has now been synthetically formed by MM. Erlenmeyer and Lipp; a Russian chemist, Horbaczewski, has also succeeded in building up *uric acid*. Both these bodies have previously been obtained only from animal products, and their formation without the intervention of vital processes is therefore of great interest. We are by a knowledge of their constitution brought so much nearer to the possible artificial formation of even so highly complex a

substance as albumen itself. To turn to the vegetable kingdom, the artificial production of quinine is a line of enquiry at which many eminent chemists are working, and the progress made during the past year, though of purely technical interest, justifies us in predicting that this interesting result will soon be attained. The artificial production of indigo, which a little time ago was of a merely theoretical value, is now being commercially worked by a manufacturing company in Germany.

Uses of Quicklime.—The fact that quicklime, when slaked, expands, has been turned to account in coal getting. A thin metallic cartridge is filled with powdered, tightly compressed quicklime ; this cartridge is inserted in a hole made in the face of the coal, as in ordinary blasting operations. The cartridge has attached to it a long india-rubber tube, through which water is forced to the lime. The lime in expanding acts as a charge of gunpowder, and disrupts the coal to an extent depending on the size of the charge and the tightness with which it is inserted in the rock. By this process, not only is the blasting in mines rendered safer, but the danger of explosions from coal-gas is also avoided. Lime has long been used to purify coal-gas, but it has lately been proposed to use lime not in the purifiers, where the gas already made passes over it, but to mix 2 or 3 per cent. of lime with the coal in the retorts. The yield of ammonia in the gas is thereby increased and the quantity of sulphur compounds greatly decreased. As the ammonia is not only very valuable, but also easily separated, this process will probably lead to increased economy in the production of coal-gas. The lessened percentage of sulphur will also enable a purer gas to be made at the same or lower cost than at present.

Rare Elements.—During the past year considerable additions to our knowledge of the rare metals have been made by the work of Professor P. T. Cleve, at Upsala, and by Dr. B. Brauner, at Manchester. In a few exceedingly rare minerals—cerite, samarskite, and gadolinite—there have been discovered at different times at least a dozen metals whose chemical and physical properties are so much alike that their separation from one another is a matter of extreme difficulty. Their great similarity and limited distribution lend help to the theory that they are molecular combinations of some simpler elements, formed under conditions in the earth's history which have now passed away.

In another group of metals, that to which sodium and potassium belong, C. Setterberg has succeeded in isolating cæsium—a

metal which, though discovered by Kirchkoff and Bunsen in 1860, had not previously been obtained in a pure form.

Dissociation of Chlorine.—The three elements—chlorine, bromine, and iodine—form a well-marked natural group, with physical and chemical properties varying in accordance with their atomic weight. In some researches on the specific gravity of iodine at high temperatures, Victor Meyer showed that above 800° C. the iodine molecule was dissociated into a simpler form, with only half the specific weight possessed by the gas below that temperature. The same at a somewhat higher temperature was shown to be true of bromine, but for some time chlorine resisted complete dissociation. Victor Meyer, however, has now been able, by diluting the chlorine gas with air, to reduce the specific gravity, by employing a heat varying from 900° to 1,200° C., to one-half its value at ordinary temperature.

J. F. Iselin, M.A.
C. A. Buckmaster, M.A.

THE ART EXHIBITIONS OF THE YEAR.

The usual exclamation which is in everybody's mouth annually for the first three weeks of the Royal Academy Exhibition—"It is a very poor Academy this year"—was so far apparently justified on this occasion that there was nothing that could be called a great painting on the Academy walls. But it was not, for all that, a bad or uninteresting exhibition. Several among the artists who are not yet considered as holding quite the highest rank did better and more brilliantly than they ever did before; and several among the admittedly leading artists were quite up to their best quality in regard to execution, though they did not choose subjects of the highest interest. Among them, however, we cannot reckon the President. His leading work, entitled "Kittens," was a fine piece of rather unusual colour, representing a young girl with a very large head, seated and half stooping over a kitten, but looking as if she were asleep. The combination of rich crimson robes with the gold background and bright fair hair was fine to look at; but the picture was absolutely without human interest or feeling, and this not uncommon defect in Sir F. Leighton's work was not atoned for, as it sometimes is, by great physical beauty in the

picture. The best representation of Sir F. Leighton's powers was in the half-length entitled "Memories," where the hand and arm formed one of the most exquisite bits of drawing and painting that could be seen; and the face had more of expression than is usual in the paintings of Sir F. Leighton, who would unquestionably be the greatest painter of the day if he could only give us something more of soul beneath the beautiful exteriors of the figures he finishes so highly.

As it is, if to be "a greatest painter of the day" means to be more thoroughly than anyone else what you mean to be, Mr. Tadema is the man. His main object is to revivify in a brilliant and realistic manner the exterior and material facts of ancient Greek and Roman life; he, again, gives little character or interest to his figures; but he hardly professes to do so; they are figures in Greek or Roman costume, that is all. But in "An Oleander," the court of an antique house overlooking the sea is realised with a force and brilliancy beyond which painting cannot go; the sunlight streaming through the balustrade and lighting up the marble floor of the terrace is absolutely real, and the gleam on the more distant bits of marble work emphasises the cool shadow of the foreground chamber with its red-tinted walls, mosaic floor, and the oleander growing out of a great oddly-designed bronze bowl as characteristic of great antiquity as anything could be. The artist's diploma picture, "The Way to the Temple," exhibited this year, was very interesting and brilliant, but the entablature of the temple is certainly out of perspective, a fault one would have thought impossible in Mr. Tadema.

But the highest interest in painting is in those works which deal with human feeling and human life; and one cannot but reflect how very poorly off our painters seem to be for such subjects, in spite of the infinite variety and interest of life present and life past. The want of interest in the subjects of the pictures in most of the Academy exhibitions strikes one forcibly when one comes to think at all what painting is for and what it is we look for in a picture; or in other cases the artist has chosen an ambitious and interesting subject, and treated it with no insight or force of realisation; allowed all the life of it to dribble away in the process of painting. Thus there was a large picture by Mr. Archer, crowded with figures, representing a scene at the preaching of Peter the Hermit, but totally uninteresting, the figures looking like so many stage "supers," richly dressed and acting a part. A young painter, Mr.

Logsdail, made a sensation by a large painting of the crowd on the Piazza at Venice, very clever but utterly vulgar, and conveying the idea that there was barely a decent or respectable member of society, or any type of the more dignified and worthy side of life, present to his eye at all. Mr. Calderon painted a large picture of "Joyous Summer," with groups of placid young women of no character, either real or ideal, doing nothing in a wood, and not even "doing it very well." Mr. Dickson gave a still larger canvas of the solemn and pathetic parable of the "Foolish Virgins," reducing it to utter commonplace and feebleness. These are among the things by prominent men and occupying prominent positions in the Academy exhibition, which make one sometimes ask the question, What is the good of all this? and what does it add to our perceptions of anything, except as to the power of manipulating pigments on canvas so as to produce an imitative representation? That power in itself is of interest no doubt, and is not acquired without hard study; but the illustration of it is not a sufficient object for annually exhibiting pictures. There were works, however, this year which have a much more vivid interest. No one is likely soon to forget Mr. Orchardson's "Voltaire," the best picture he has ever exhibited; the scene after Voltaire had been brutally assaulted at the hands of the Duc de Rohan's ruffians, and rushed up again to the Duc de Sulli's dining-room, whence he had been decoyed for the occasion, to endeavour to rouse his aristocratic host and the rest of the party into a personal share in his indignation. The figure of Voltaire, trembling with rage, and the placid demeanour of the guests, form a contrast emphasising the tale of the conflict between genius and whitewashed respectability so constantly recurring in the history of society. Mr. Orchardson's colour is peculiar, and not very pleasant to our eyes, and his manner of handling is rather sketchy and splashy (in appearance, for it is probably very careful in reality), but his style is at least entirely his own, and has an individual interest on that account. Mr. Faed also, in his "They had been Boys together," struck a note of stronger and more pathetic feeling than he has generally done; not but that Mr. Faed has often meant to be, and sometimes has been, truly pathetic; but too often he has been content with mere commonplaces of domestic pathos which have been worn threadbare long ago. In his representation of the contrast between the successful man poring over the card of his old associate in the effort to recall

the name and the personality, and the sad, shambling figure of the unsuccessful man, Mr. Faed has given a very intense and real picture of one of those sharp contrasts of human life, which are nowhere to be seen in a more striking form than in London itself. Mr. Fildes treated a subject of village life, "The Wedding," with real point and feeling; and the very pretty study of character in the bride, evidently a respectable servant-girl, raised for the moment, by happiness and modesty combined, to a grace and delicacy of manner beyond what would have been usual with her, showed the artist's insight into what lay below the surface of his subject, and might be instructively compared with Mr. Logsdail's vulgar figures, the mere outsides of doubtful-looking women, without feeling or character.

We may run over the recollection of some few other Academy pictures which left their mark on the memory, and some of which were by men who may have further reputations to make. Mr. Maynard Brown's "The Last Look" was one of these, a painting of real pathos, to be contrasted with the sham pathos of Mr. Macbeth's *posé* piece of sentimentality, "The Sacrifice," which, as an engraving, is in all the shop-windows, we observe; a sad illustration of the sort of art which draws the popular mind. Mr. Frederick Barnard's attempt to realise John Bunyan's jury, "Mr. Highmind," "Mr. Enmity," and the rest, though a little verging on caricature, was a really clever experiment of an out-of-the-way type. Not so the "Private View Day" of Mr. Frith. Mr. Barnard painted imaginary characters as if they were real, Mr. Frith real characters as if they were dummies. His smaller painting, called "Honeymooning in Switzerland," surpassed this however, and must certainly be reckoned among the pictures that remain in the memory, for no one who had once seen it could ever forget it, nor Mr. Herbert's pathetic scene of "The Wounded Bandit." The existence of such works "on the line" shows how much need there is of reform in the ranks of the Academy, or in the regulations by which the best hanging positions are allotted. But to return to the pleasanter side of the subject. Mr. Crofts gave, in his scene of the interception of letters by Cromwell, "At the Sign of the Blue Boar," one of the most completely worked out of all his scenes from the Parliamentary War period; a far more satisfactory picture than Mr. Gow's "Trophies of Victory," though the latter was a more brilliant and unusual subject; but he did not attain that point and completeness in the telling of the story which gave such

reality and vivacity to Mr. Crofts' picture. In "Maternité," by Mr. Reginald Bottomley, we had one of those pieces of concentrated feeling, expressed in a manner quite the reverse of commonplace or prosaic, which English painters so seldom give us; and we should not be surprised to hear, what the French title of the picture suggested, that Mr. Bottomley was artistically of the French school. It was a half-length of a sad-looking woman, carrying her baby, and contrasting her own painful and anxious maternity with that shown in a painting of the Madonna and Child, or perhaps feeling a bond of sympathy which would justify her in seeking help and comfort from "Our Lady." Now that is a painting with an idea in it, a thought which sets one thinking further, besides being a good representation of life; and that element of thoughtfulness is just what we find so deficient in English art. "An Impromptu Dance," by Mr. Fred Brown, was an attempt, by no means unsuccessful, to make something of interest out of the scenes of an ordinary London street; two children joyously dancing to a barrel organ (only a painted one, fortunately—would they were all as silent!), with one of the thoroughfares of Chelsea as a background. Another very clever London street picture was Mr. Gregory's "Piccadilly;" but here no figures stood out as prominently expressive from the rest: the general scene was the painter's object. Mr. Crofts' "Charles I on his Way to Execution," along the Mall of St. James's Park, was a very fine and carefully studied representation of a most pathetic scene in English history, and impressed us as a very real and probable pourtrayal of the event. Two of the cleverest paintings in the whole Academy belonged to the class of what may be called peculiarly artist's pictures, which gain their interest and value from sheer force of treatment rather than from anything which the subject might at first seem to promise of interest or story. These were in two opposite corners of the second room, and were both by foreigners (hence the "cornering"). One was a study, by M. Fantin, "L'Étude," in fact a portrait of a lady about to paint some flowers from a bunch before her, which she was studying while looking at the empty canvas on the easel. This was a very boldly treated painting, with the head painted with great force and almost in relief upon a ground of nearly bare canvas, with only a thin priming over it. It was a thing that only an artist perhaps would thoroughly enjoy, and which certainly only a thorough artist could have painted. The other picture we referred to was the small canvas, by Herr de Blaas,

entitled "Flirtation," a dialogue between a boatman and a woman standing in full light against the dark background of a Venetian entry. The figure of the woman was one of the most admirable pieces of drawing and colouring that has ever been seen on the Academy walls.

Among the Academy portraits of the year one stands pre-eminent: that of "Mr. J. C. Hook," by Mr. Millais; a tall figure, holding a palette, and with features as bronzed and weather-beaten as an old sailor's, from probably almost equal exposure to sea-weather in the pursuit of his art. Mr. Millais's Marquis of Salisbury was another of his really wonderful portraits of political men, in which he seems able to sum up the whole political character and career of his sitter; the figure of the Marquis in this painting is the very type of Conservatism. The same artist's portrait of a young lady, under the title "Forget me not," was an example of the extreme of the style of very splashy and white handling in which he occasionally indulges, and which gives a very disagreeable effect when carried to this length. Mr. Watt's one portrait in the Academy impressed us as chiefly intended as an experiment in colouring; a study in reds with one bit of green to set them off. Mr. Holl contributed very largely and brilliantly to the portraits of the year, including a very effective portrait of Lord Wolseley, rising quite above the usual commonplace of military portraits, and realising something heroic in expression and pose. Among his other portraits, however, Mr. Holl betrayed a tendency to a very marked mannerism in his way of throwing a sharp high light on one side of the face of his portraits, somewhat stronger than would be likely to be seen without some artificial arrangement to produce it; it is effective for once or twice, but when seen half-a-dozen times in succession it became tiresome and unreal. Mr. Ouless had some capital portraits, especially one of "H. J. Kennard, Esq.," in which he had the advantage of a sitter with a very fine and effective head. One of the cleverest portraits in the Academy was that of Mr. Cousins, the engraver, by Mr. Long; and another in a very different style may be recalled, that of the Countess of Dalhousie, by M. Carolus Duran, a typical specimen of what may be called *bravura* portrait painting—the pompousness of a Vandyke without its dignity; the kind of thing that is hung on the staircase in a great house; vulgar to our thinking, but not without force of a kind.

Landscapes were represented by a good deal that was poor and

commonplace, intermingled with some works of exceptional excellence and beauty. The Committee, it is known, had the impertinence (for it can be called no less, considering some of the landscapes which are well hung) to send back one of the only two works contributed by the greatest landscape painter of the day. Mr. Alfred Hunt's other work, his one representation at this year's Academy, and entitled a "North Country Stream," was far too delicate in tone and feeling to be done justice to in the atmosphere of an Academy exhibition, but it was a gem of painting, of which almost every square inch had its interest, and which was really deserving of close and repeated study as an interpretation of nature on canvas. Perhaps the one which should be named next to this was Mr. Brett's "Come unto these Yellow Sands," a wonderfully delicate and realistic representation of rocks, and shore, and shallow pools, and sunlit sea (a little *too* blue), and sea gulls casting their shadows on the sand. But there is a long step from Mr. Hunt to Mr. Brett. However fine and powerful Mr. Brett's representation of nature is, it is for the most part one aspect of nature only, and always stamped with his peculiar manner and tone; it is not so much nature as Brett; while Mr. Hunt's pictures are as varied in tone and feeling as their subjects, and descend into no mannerism of any kind. Few if any other landscape painters of the day attain, or even seem to aim at, this variety of all-round power of pourtraying nature. They elaborate an effective manner of representing some special phase of nature, and repeat it, sometimes improving continually as they proceed, but never quitting their special groove, or producing any picture the authorship of which one could not at once assign on looking at it across the room, from its general appearance, even when too far off to see any details. Mr. Hook is the most powerful and successful of these painters of special effects, and in one respect he is superior to Mr. Brett, for he has more boldness and breadth of style, and gives not only the outward aspect of the sea, but an indescribable feeling of its freshness and scent. His "Catching a Mermaid," which hung by the side of his own portrait, was one of the finest things that he has ever done, and conveyed an idea of the movement and even sound of sea water as Mr. Brett's more elaborately finished realism scarcely does. Mr. Moore is another painter of special sea effects, the effect of wind on the sea—the sea in wrath; and he, too, has a little overdone his special phase of painting, and exaggerated its peculiarities, and his large

painting in this year's Academy was more remarkable for "dash" than for real force and truth. Among the landscape painters, as distinguished from sea painters, Mr. Vicat Cole's blue distances and warm brown foregrounds continue to appear on the line, with just the same effect year by year. Mr. Keeley Halswelle has found a mannerism of his own, very effective when one first sees it, but losing its effect with each repetition. Every here and there one might come upon a landscape which seemed really the representation of a special effect, not an adopted receipt for a picture; among such were Mr. MacWhirter's "Corrie, Isle of Arran," and Mr. David Bates's "Under the Beeches, Malvern: Winter Afternoon," and Mr. Alfred Parson's "First Frost," a really delicate and truthful study of the season indicated; but we fear a large proportion of the annual landscapes at the Academy can hardly take higher rank than is implied by clever picture making, following the beaten track of an adopted method.

Of the sculpture at the Royal Academy it would be quite true to say that it was unusually poor this year, and some of the selections made, coupled with some of the known rejections, could only be accounted for, it is to be hoped, on the supposition that it was actually the fact, as reported in "sculpturesque" circles, that the Academician who should have presided over the selections was absent from illness, and the responsibility fell upon the shoulders of subordinates. That might account for the acceptance of the intolerably vulgar "nigger minstrel" figure in coloured marbles, which astounded art critics and disgraced the Academy. The work from which much was expected, the Perseus of Mr. Simonds, one of the few English sculptors of the day who attempts the practice of sculpture as a really ideal and imaginative art, disappointed expectation to a considerable extent; the figure was somewhat stiff in attitude and not in all respects well modelled, and was certainly not equal to the reputation of the author of the beautiful Bacchus exhibited three or four years ago. Mr. G. A. Lawson, another ideal sculptor, contented himself this year with a very pretty figure of a young girl seated, looking at a tortoise; a really graceful and sculpturesque work, but not in its author's highest vein. A very brilliant study of a head in bronze, by Mr. A. Gilbert, was considered to promise great things, and Mr. R. B. Browning's bust of an Italian woman in the same material was not an unworthy pendant to it. The "Dawn of Womanhood," a very

cleverly modelled though not beautiful recumbent figure by Mr. Stirling Lee, showed the influence of French training, and received much attention from artists and critics. To the general public in England the object and interest of such work, and indeed of any ideal sculpture at all, seem to be an insoluble mystery.

The subject of sculpture reminds us of the talk that has been made during the year in regard to the Wellington statue, on its descent from its unsuitable position on the arch which is now removed and rebuilt. The general impression seems to be that the melting-pot is now its destiny. We are by no means entirely satisfied at the idea of such a course. The statue is the actual work put up and subscribed for by the nation in honour of the Duke; the horse was modelled from his charger, the head of the rider from the living man; the statue has been long in a most unsuitable position in which it was justly an object of ridicule, and it is not a first class work; but on a suitable pedestal and in a suitable position it would not be so bad as to be good for nothing but melting down; and are we quite so certain to get a better one? We wish we could feel sanguine; but other sculpture competitions (and this would of course be thrown open to competition) have not left one much room for hope.

The Grosvenor Gallery, though the usual winter exhibition did not take place, and there had been some doubts about the continuance of the exhibitions on the same lines, opened as usual in May, with a collection perhaps the more valued by some because it exhibited less than usual of that special school of painting which has been almost proverbially connected with Sir Coutts Lindsay's gallery. The finest things in it were among the portraits, of which Mr. Millais's "Duchess of Westminster" was the best, and one of the finest and most charming feminine portraits he has ever done; in its refined execution and the truly ladylike expression and pose of the figure it formed a very instructive contrast to the self-conscious and affectedly "artistic" portraits of ladies of Mr. W. B. Richmond. It would be as difficult to select from the Grosvenor as from the Academy any one work which could be called the picture of the year *par excellence;* but there were a good many fine and interesting works. Mr. H. Moore exhibited a painting of sea, "Tide-race in a Summer Breeze," with a heap of water running away to the left under the double influence of tide and breeze, which will not be forgotten; it represented all his finest qualities with few of his

defects, and conveyed an idea of tumultuous movement of water such as we have not often seen realised on canvas. Mr. Nettleship's "Blind Lion" was another picture which left its mark on the memory, not only as a fine piece of animal painting, but as a rather unusual attempt to give a pathetic turn to a representation of animal life. Mr. Burne Jones's picture of "The Hours" we liked much better than his large and more ambitious work "The Wheel of Fortune"; it showed a line of sad but sweet-looking damsels clad in harmoniously coloured robes, seated, and representing "The Hour of Waking," "The Hour of Work," "The Hour of Dining," and so on through the leading typical occupations of the day. It would have made a beautiful design for a stained glass window of a higher class than we usually see. "The Wheel of Fortune" was an example of the mistake of reducing pure allegory to painting. The allegory of Fortune turning a wheel is well enough to think of; but when we come to a colossal female turning a solid material wheel with naked men bound on the rim, and going round with it, the whole idea is reduced to such plain prose as to become almost absurd. Among the portraits of the Grosvenor, Mrs. Collier exhibited a very clever one of her husband, under the title "An Artist at Work," with his brush in his mouth while mixing flesh-tints with his palette-knife, and looking out of the picture at his imagined sitter; there was something just a little ludicrous in it, but it was undeniably a new idea in the "circumstance" of portraiture, and worked out with great ability. Mr. Collier himself contributed a very interesting collection of portrait heads of three sisters in three panels of a long frame; in this case decorative effect of colour was combined with good taste and refinement of feeling. Mr. G. F. Watts contributed one or two very beautiful and interesting portraits—interesting as delicate and curious experiments in colour and manipulation; we should not have been surprised to hear that they were not considered successful as portraits, and that clearness of complexion was very much sacrificed to the desire to produce from the face a certain tone and texture which would blend with the general scheme of colour arrived at. There are, in fact, two or three principles of painting portraits. There is that of the simple likeness, in which Mr. Millais is now the greatest master; there is the decorative portrait, like that affected by Mr. Richmond, and in the late Mr. Morris's portraits of children, in which the personality of the sitter seems to be quite a secondary matter in comparison with

the colour of the drapery and æsthetic screens—and this seems to us the lowest way of treating portraiture; and there is the ideal style, of which Mr. Watts is the only great master at present, which consists in giving rather the idea or the mind of the sitter, as the painter sees it, or making the countenance the suggestion of an ideal personage, still retaining the likeness. This is a beautiful form of art, requiring an intellectual effort on the part of the painter; but it hardly fulfils the primary object of portrait painting, that of preserving the likeness and personality of the sitter, so well as Mr. Millais's more simple and downright method. Among other pictures in the Grosvenor were some good landscapes, and some very bad ones; one or two remarkable nude figure studies, particularly one by Mr. Calderon, a bather by a pool in the recesses of a wood, which was really poetical as well as finely painted; and some paintings which seemed to have for their object the reduction of antique Greek legend into plain and even revolting prose, such as Mr. Matthew Hale's "Psyche before Venus," where Psyche looked like a beggar-girl kneeling for alms, with her clothes in rags, and Venus like an impudent hussy, no better than she should be, seated in a drawing-room chair, and without any rags at all. That is supposed to be "ideal art," however.

The Annual Winter Loan Exhibition at the Academy Rooms included plenty of ideal art in one sense, as it gave, for the first time, a collective exhibition of Rossetti's paintings, which was supplemented by another collection of his paintings and sketches at the Burlington Fine Arts Club. The system on which Rossetti's paintings have been carefully nursed by critics, most of whom were his personal friends, while kept out of public view and only shown to a few sworn admirers, must have provoked both curiosity and doubt in the minds of many people in regard to the real qualities of this mysterious artist always talked about but never seen. To those (ourselves among the number) who had had opportunities of becoming acquainted with his work before, it was of some interest to observe what would be the general verdict when his paintings were brought forth to public view. The result appeared to have been a very general feeling, except among a few enthusiasts, that the reputation of the artist was a very artificial one. That he could not draw the figure his own friends admitted, and forthwith tried to persuade you that drawing was a very secondary matter; it was colour and poetic feeling and fire that we were to look for in painting. Old-fashioned people

probably felt that power of drawing after all counted for something in art; and that paintings of a number of women with ill-shaped hands and impossible long necks and stiff pose, however poetical in conception, did not quite come up to what we are entitled to expect from a man who very decisively pronounced himself to be a great painter. Exceedingly fine colour in a decorative sense there no doubt was in his pictures; and two of the principal ones, the "Sybilla Palmifera," and "The Beloved" (the latter an illustration of a verse in the Song of Solomon) presented a beautiful type of face, and a higher expression than most of the others. The majority of the ideal ladies whom Rossetti painted have all the same type of face, and a very disagreeable and sensuous one; it looks at us without variation (except in regard to costume) from one canvas after another, in figures which seem the sickly dreams of a morbid mind. The best things Rossetti did are in the first place his quasi-mediæval designs on a small scale, such as the little triptych of the history of Paolo and Francesa, and the "Girlhood of the Virgin;" and secondly, the first sketches in black and white for scenes from history or from Shakspeare, which he wanted the energy or ability to work out into pictures. Some of them show great force and originality of thought; but when he came to drawing on a large scale his *technique* seems always to have failed. The exhibition of his works gave rise to a great deal of "ink shed" among the critics of the æsthetic persuasion; but on the whole the effect of the exhibition was, we think, to put Rossetti much more in his right place in general estimation than when he was only known through the laudations of his friends in the press.

The same loan exhibition included a collection of the works of Linnell, the landscape painter who carried on the practice of his art, with youthful vigour, to past his eightieth year, and who had the spirit to decline being elected an R.A. when the academicians offered the honour at far too late an hour to be a real compliment. It is noticeable that, when seen collectively, Linnell's works produce less impression of sameness and repetition than might have been expected. A Linnell was always a Linnell, unmistakably; but the artist passed gradually and almost imperceptibly into two or three different phases of style in the course of his career, and in his collected works there is sufficient variety for interest. The high qualities of Linnell's art consist in his broad, free, and powerful style, and in his appreciation of the grander effects of nature. Poetic his landscape was

not, except in so far as a powerful transcript of a fine scene must impress us as poetic; but there was nothing especially ideal in his aims, nor did he ever realise or attempt the delicate and subtle indications of tone and atmosphere and colour in nature which Mr. Hunt and Mr. Goodwin have given us. He went straight to the mark, and gave a forcible effect—a stretch of distance over a vast plain; a crimson sunset; a thunder cloud rolling up over the cornfields, with all the force his palette and his knowledge of the contrast of warm and cool colours could command. A little of Linnell, it may be said, goes a good way; he is a painter whose works one would not care to multiply in a gallery; but on the other hand he is a painter whom no one who cares for English landscape can afford to leave unrepresented on his walls.

The Royal Society of Painters in Water Colours has kept up fully its old prestige as the leading exponent of this beautiful and peculiarly English branch of painting. Nothing that was especially new was to be noted in its May exhibition; most of the best among the usual contributors were fully up to their usual standard, Mrs. Allingham especially so, and one of the recently added members, Mr. Wilmot Pilsbury, has shown a steadily increasing power and variety, and a thoroughness of work, which ought to render him a very valuable member of the Society. One new member, Mr. Wainwright, exhibited a degree of power shown in a coarse and semi-grotesque style such as we should be sorry to meet with frequently on the walls of the Society's rooms. An incident in the artistic history of the season has been the opening of the new rooms of the Institute of Water Colours, which (not to be beaten), has since obtained the like honour of the prefix of "Royal" to its title. The very fine rooms of the Institute were filled with a large collection of drawings, over 800, including on the whole an extraordinary amount of presentable work, but not a great proportion of work of the best class; and it may be doubted if the exhibition will prove permanently a success. Water colour is, after all, of the nature of a cabinet art, and its productions do not tell in such large rooms and large spaces as those of the Institute gallery. Moreover, the temptation in that case is to paint large and loudly on account of the space; a temptation to which some of the old and now rather *passé* members had evidently yielded, and one saw the crowds of people with Dutch cheese faces of one artist, and the Naples yellow sunsets of another, which have dignified the walls of the old gallery for years, now re-appearing

in all their glory on a scale four times the size of their previous apparitions. The salient points of the Institute's exhibition were Mr. Linton's large and uncommonly fine drawing, "An Exhortation" addressed to some Florentine sinners of the cinquecento period by an ecclesiastic, and Mr. Abbey's very delicate combination of humour and pathos, "The Widower"; there was an exceptionally fine landscape with figures by Mr. Parsons, fine in execution, for the subject was "nought," women hanging out clothes in an orchard; and there were other things of real power, notably a beautiful Thames study by Mr. Aumonier. But a great many of the habitual landscape painters of the Institute are, it must be confessed, very mannered artists, and make up their scenes on a most artificial method. They have a tower of strength in figure painting in the possession of Mr. Linton, and also one really powerful and fine landscape artist, Mr. Collier, whom we were nearly forgetting; he is a follower of the school of David Cox. But they have not talent enough to form an adequate nucleus for making a first class exhibition in so large a gallery as that, and we do not expect that their exhibition will ever be a rival of that of the Society of Water Colours, though they have (rather unjustifiably) decorated the exterior of their new building with portraits of Girtin, Cox, and others who were all original members of the old Society.

The exhibition of the works of Mr. G. Tinworth, at the rooms in Conduit Street, has afforded a favourable example of precisely the kind of thing in sculpture which the public likes and can appreciate. Mr. Tinworth's career has been in some respects a remarkable one; he was an assistant at Messrs. Doulton's terra-cotta works, where he evinced a genius for modelling, and was very sensibly and liberally encouraged and helped by the firm, who have done so much to promote artistic workmanship in terra-cotta and kindred materials. Mr. Tinworth showed in some small reliefs, exhibited at the Academy, great vivacity in telling Scriptural stories in this semi-pictorial form; and the larger work which was exhibited at Conduit Street was the same type of production on a greater scale, and with more elaboration. In some of the crowded scenes from the life of Christ, especially in the dramatically constructed scene of the release of Barabbas, "the world's choice," as the artist labelled it, in which a moral lesson in clay is read to the spectator, there is great spirit and expressiveness in action and countenance; in action more particularly, for many of the countenances are very roughly

modelled. But in the general style of the work there is no real sculpture in the highest sense of the word; none of the refinements of the art; the work consisted of Biblical scenes modelled with spirit and with a pervading seriousness of intention and belief in their importance, and this is exactly the kind of thing which attracts the average family English man and English woman. To go further than this, we should say would be to exaggerate Mr. Tinworth's merits, which have been very fully recognised by some contemporary critics, rather to the detriment of the rightful claims of sculpture of a higher class.

Among the foreign exhibitions which have taken place in London, the usual collection of the French and Flemish Gallery in Pall Mall has been quite equal to its standard of late years; it is never now equal to what it used to be a good while ago. In addition to paintings of great excellence by some of the usual contributors to the gallery, among which were conspicuous one remarkably clever work by M. de Blaas, a "Wedding during the Carnival," and paintings by Seiler, Heffner, one or two by Israels, and others, there was also a special attraction in the studies from modern figures and architecture by Professor Müller. His powerful and brilliantly-painted Arab scenes, with their effect of fierce sunlight, have been familiar on the walls of Mr. Wallis's gallery for some years; in his studies we were enabled to see how thorough was the foundation of his work; and these alone were worth a visit. London has also been enlivened by an exhibition of the works of the set of French and American-French artists, who call themselves "Impressionists," and whose appearance here was made the occasion for an attempt to get up some special interest about their views of art. "Impressionist" is a capital name; it is as good as "artist" for a tailor's cutter, but it conceals a very simple business. The Impressionists profess to have a new view of the scope of art in reference to nature; you turn your head towards a scene for one moment, and in that moment you take in through the eye an "impression" of the beauty and character of the whole scene, without going into details which would only distract you. Very well, paint that impression. That is the theory of the movement. The practice may be expressed in much more commonplace language: the Impressionists are simply people who make sketches, and endeavour to persuade you that a sketch is the higher and better art for not being finished. In the case of many of them it probably is; this kind

of "whim" in art is often the resource of people who have little real artistic power, and who find it pays to be whimsical, particularly when there are obedient critics ready to write about them and represent them as new lights in art. But that is all that it comes to. Among the Impressionists are two or three men of real talent, whose sketches are, therefore, brilliant, and who realise certain effects of light by dint of dropping other details so as to emphasise the especial effect they are aiming at; and most of these really clever men within their ranks have the tact to keep their studies to a small scale. There are others who paint figure scenes in this splashy style life size, and representing men and women dressed in the crudest colours of the most vulgar everyday garments. The effect of these is sometimes simply hideous, and the exhibition of such things as pictures was almost an insult to the discreet spectator. That is all that need be said about the Impressionists in London. They did not attract many spectators, and of those who did go we believe the majority came away confirmed unbelievers, not to say scoffers.

New movements of this kind crop up every now and then in the world of art, as if to show to what absurdities want of success and the determination to be noticed will drive people. There was another exhibition of French artists held at the Dudley Gallery—twelve irreconcilables, who declined or were refused the honours of the *salon*, and determined to exhibit on their own account. These twelve apostles of reformed French art were also, more or less, allied to the Impressionists. One of them produced a study of a rough sea, which looked as if a quantity of white and greenish pigment had been put on the canvas with a shovel; but some of the figure-studies, particularly those of two old French workmen, by M. Roll, were very good, and there was a fine rough nude study in plaster for a statue of John the Baptist preaching in the wilderness. Among others of the special exhibitions of the year may be named the exhibition of the pictures of children by various artists, got up at the gallery of the Fine Arts Society, New Bond Street. These included pictures of childhood by Sir F. Leighton, Messrs. Millais, Leslie, Calderon, and others. Sir F. Leighton's picture was hardly within the category, for the girl of fifteen whom he painted looked older than that in mind and manner, but she was one of the most exquisitely-refined personages we have ever seen on canvas, the perfect quintessence of the dawn of ladyhood, as

one may say, in a girl of refinement and genius. Mr. Millais painted a very beautiful picture, "The Captive," which was in reality rather out of the "child" category also; this was his second contribution; the first was really a child, with a bird in her hand, at which she was not looking; a peculiarity which we have noticed in other pictures by this eminent painter, and which we suspect arises from his introducing subsidiary objects as an afterthought, after the face has been painted independently of them. Among all the veritable child-pictures of the collection, however, not one approached the "Little Customers" of Mrs. Allingham, which was in the Society of Water Colours Exhibition some years ago, and seems to have been brought out again at this exhibition as a tacit confession that the artist could not surpass it as a picture of child-nature and child-manner; and either she or any one else would find it very difficult to do so. In the same gallery were exhibited some battle pieces by M. de Neuville and Mr. Caton Woodville—"Tel-el-Kebir" and "Kassassin," of which the former was much the better, both in an artistic and a realistic point of view. An exhibition of Mr. Whistler's etchings in one room of the same house was also the talk of a few weeks, chiefly in consequence of the "æsthetic" decoration of the room by Mr. Whistler in white and yellow, the wall being covered with blankets strained upon it; the effect was to make the room very close and stuffy, and the odd combination of colours, though interesting, hardly deserved all that was said about it. But these little eccentricities give variety and diversity to the artistic experience of a season, and are not without their value.

THE PROVINCIAL CONGRESSES OF 1883.

No one can have failed to notice the increase within the last few years in the number of the Congresses held in the provinces during the autumn season. That number is no longer limited to the demonstrations by such well-established institutions as the British and Social Science Associations. It may now be said that there is scarcely a professional body which has not its recognised reunion during the political recess. We do not allude here to the purely ecclesiastical gatherings, such as the Church Congress, which take place at that time of year, and which do not come within the scope of these remarks. We allude rather to such assemblages as the Trades Union Congress, the Iron and Steel Institute's meeting, the British Medical Association's Conference, the Librarians' Congress, and others which will at once occur to the reader, and need not be catalogued. The appetite of the public in this respect appears to have grown by what it has fed on. The examples set in one or two directions have been followed in many others. Certain sections of the population have not been content to see other sections represented in this way and themselves unrepresented. Civilisation has become so complex, and there is such a Babel of voices in the world, that it has become almost necessary in self-defence for the various classes of the community to put themselves in evidence before the country. And the result is, that scarcely a year passes but an addition is made to the list of those autumn demonstrations to which we have referred.

Unfortunately, it cannot be said that, as the number of these gatherings has increased, so has the national respect for them increased likewise. Whilst, on the one hand, it is admitted that the ecclesiastical meetings are emphatically beneficial both to the various religious bodies concerned and to the country at large, it is not admitted that what may be called the miscellaneous congresses are altogether useful or interesting. At any rate, many limitations to their utility and attractiveness are put forward and enforced. It is urged, to begin with, that they are marked by too much talk and by too little solid work; that they represent, for the most part, so many columns of unsubstantial verbiage, perpetrated, for the most part also, by men who cannot speak with real authority on the subjects on which they deliver themselves. It is urged that the papers read and the speeches

made are, in too many instances, identical with the contents of editorial waste-paper baskets; that men say at the meetings of these various associations the things which they have not been permitted to say in the reviews and magazines and other periodical publications. This was a favourite suggestion of the late Charles Lever, and it still finds exponents in the press and elsewhere. Then, it is roundly asserted, by those who have no respect for dignities, that these congresses are only so many excuses for pleasurable autumn outings; that if some business is done at them, there is much more done in the way of amusement and entertainment; and that but for this feature of the proceedings, provincial congresses would not be so popular as they are with those who attend them.

This last suggestion, it must be owned, is a little ignoble. Because, for example, the Associated Chambers of Commerce spend two days only out of five—and not quite that—in practical discussion, the remainder being given up to excursionizing and sight-seeing, that does not make the deliberations of the two days any the less business-like and useful. Nor do we see why with the *utile* there should not be a mingling of the *dulce*. Nay, the sterner critics of provincial congresses might assert that the time devoted by these bodies to sheer pleasure is after all the most fruitful in genuine utility. These congresses, as is well known, are movable feasts, and it may be said that their members are even more benefited by the knowledge that they gain of different parts of the kingdom than by what they hear at the meetings of the associations. However this may be, there is not much force in the accusation that these gatherings are mainly for the purpose of holiday-making. Much more force is there in the contention that there is an intolerable deal of talk to the pennyworth of really valuable outcome. There can be no question that of all of these autumnal reunions it can more or less be said that they are marked by unnecessary and unproductive oratory. We are a nation of public orators, and perhaps the "much speaking" at congresses ought to be attributed to the national characteristic. Rather should we say, however, that the fault lies in the failure of the managers of the associations to arrange thoroughly adequate programmes. Of the Social Science Congress especially may it be urged that, somehow or other, it does not bring together many men of position and admitted information on the subjects dealt with. It must be conceded that in the case of this congress in particular the days of discus-

sion are too often days of small things; that the local element, for instance, is too strong; and that too much opportunity is given to the advocates of "fads" and fancies. It is a mistake, we think, to allow the time of the Congress to be occupied, as it was occupied this year, by such discussions as that which took place on the subject of the Sunday opening of museums, &c. We offer no opinion on the topic itself, but it may certainly be suggested, and with force, that it has been thoroughly thrashed out, and that official advocates on either side ought not to be allowed to usurp time which might much more profitably be devoted to other matters. Again, it seems a little surprising that a body like the British Association should have made arrangements for the prosecution of a debate on the healthiness or otherwise of intoxicating liquors. It may be conceded that the debate itself was more or less effectively conducted on both sides; but this, too, is a topic on which, we should say, the last useful word has been spoken. At any rate, the British Association hardly seems to be the institution by which such discussions should be promoted and encouraged. An endeavour should be made to keep out of the programme these time-honoured hobby-horses, the riders of which should be advised to turn their energies into other channels. The leisure of congresses should be devoted to subjects of fresher and more substantial interest, and these subjects should as far as possible be dealt with by men who have something new to say, and who know how to say it—not by men who have been saying the same things year after year for an indefinite period of time.

And that brings us to what is perhaps the most serious of the drawbacks under which provincial congresses may be said to labour—namely, the tendency they have to discuss topics which, strictly speaking, are outside their proper sphere. There are certain congresses which loyally keep within the circle of their individual interests; the Associated Chambers confining themselves as strictly as possible to commercial matters, the Librarians limiting their talk to books and things connected with them, and the Iron and Steel Institute judiciously refraining from oratory that does not bear upon its special functions. On the other hand, the British Association can no longer be described as existing "for the advancement of science" only; the Social Science Congress talks *de omnibus rebus et quibusdam aliis*, and even so thoroughly "class" an institution as the Trades Union Congress goes out of its way to pronounce upon questions with

which as the spokesman of trades unionism it has practically nothing to do. This year it engaged in debates and passed resolutions upon such matters as the sanitary condition of our cities, the codification of the criminal law, the British landed system, the reform of the magistracy, the assimilation of the Irish parliamentary and municipal franchises, and the repeal of the Contagious Diseases Acts. These were matters in which, no doubt, the members of the Congress were, as individuals, interested, but they had and have no special connection with trades as trades, and the time consumed in discussing aud pronouncing upon them might have been much more effectively utilized in debates upon subjects of a more completely "class" character. In the same way it is not clear why the platforms of the British Association should have been opened to Sir Charles Tupper for a disquisition on the fiscal policy of Canada, and to Sir W. Wheelhouse for an oration on "free" *versus* "fair" trade. The disquisition and the oration were both valuable and interesting *per se*, but they must have seemed to most people a little out of the legitimate range of the Association. On the customs of the Social Science Congress in this respect it is not necessary perhaps to dwell so much, because "Social Science" is allowed to be a very elastic term, and there would probably be difference of opinion as to what is really "social science," and what is not. Even in this case, however, there can be little doubt that the programme might, as a rule, be revised with considerable advantage, and especially on account of the very elasticity of which we speak. Care should be taken to exclude mere crotchets, and to admit only such speakers as are able to throw actual light upon the questions and controversies on which they deliver themselves.

Allowing, however, that provincial congresses have these defects, and that they are defects of an important character, it must yet be conceded that such gatherings are, on the whole, of undoubted interest and usefulness, forming a feature of our national life with which we ought not hastily or readily to part. No doubt they come too closely together, and would be all the more acceptable for being distributed more evenly over the twelve months; sometimes they actually overlap each other, and the public is vainly asked to study the deliberations of, say, both the British Association and the Social Science Congress at one and the same moment. But whatever their faults, and whatever their drawbacks, these congresses unquestionably do their part towards the "advancement of science" and the education of the

people in many departments of knowledge. Some good cannot but come of the columns of written and spoken speech with which, by favour of the newspapers, the congresses endow us. Though some of the subjects are not well-chosen, others are of the first importance to the public; and though many of the writers and speakers are below the standard at which such gatherings should aim, others are of high position in their various pursuits, and have facts and ideas to communicate which are of undoubted value. From the published reports the general public contrives to extract a number of suggestions which no doubt fructify in various minds, to the advantage of the nation as a whole; and the localities in which the congresses from time to time take place are obviously benefited, either by attendance at the meetings or by the full accounts of them appearing in the local journals. It would be unwise, therefore, to follow the example of those writers who bestow upon provincial congresses a scarcely mitigated condemnation. The gatherings are open, as we have seen, to somewhat severe criticism, but, when all deductions are made, it is clear that they hold a position of some importance in the social economy of the country.

That the address of the President of the British Association was this year on a subject of popular interest, or that that subject was even popularly treated, cannot, unfortunately, be said. And we say "unfortunately" because it seems to us that the delivery of this particular address is an opportunity of popularising the broad results of science, of which advantage ought always to be taken. It may be said that Professor Cayley is a mathematician, and that mathematics cannot be brought down to the level of an ordinary audience, still less to that of the ordinary readers of the daily press. But the latter is a proposition which we think could hardly be sustained. There is a popular side even to a study so abstruse as that which Professor Cayley follows, and if the Professor had thought less of his brother *savants* and more of the *profanum vulgus* he would probably have produced something more generally intelligible and attractive. As it was, his prelection certainly gave to the meeting the stamp of profundity, and students of the higher mathematics were of course delighted with it. Moreover, what there was lacking of popularity in the address of the President for the year was made up for by some of the addresses of the presidents of sections. These were thoroughly imbued by what may be called the modern or practical spirit. Thus the President

of the Biological Department (Mr. Ray Lankester) contrived to turn his oration into a further demand for the endowment of research. Dr. Gladstone, who presided over the Chemical Department, dwelt upon the teaching of chemistry in elementary schools; Mr. Inglis Palgrave, at the head of the department of Economic Science, drew attention to the present-day connection between that science and socialism; and Mr. Brunlees, the President of the Mechanical Science Department, discoursed upon the accumulation of apparatus for the economising of human labour. From all of these addresses the attentive hearer or reader could derive much intellectual nutrition. The plea for the better endowment of research is an old one, but it is one which may be expected to revive, for it is one which is based upon a growing want. Research, it is clear—and the fact holds good in every department, whether literary, scientific, or artistic—is not a paying pursuit, and whilst it is prosecuted some means must be found for paying the butcher's and the baker's bills. The question is, where are those means, and how are they to be discovered? It is a favourite notion with many people that this is a case in which the State ought to step in; and there can be no question that the State gains from the outcome of research. Every new discovery, every new invention, is so much added to the wealth and power of the State. This renders it right and desirable that the State should do something for research in its turn, but it does not give countenance to the suggestion that the State should do everything for the student and explorer. It may fairly be argued that we ought to have a larger Civil List, and that that list ought to be confined more and more to individuals who have done solid and lasting good to their countrymen. The fund is at present quite inadequate for the purpose, and it ought not to be drawn upon in the interests of any one who is able easily to earn his own living. So far, most reasonable people would be prepared to go. But whilst the State ought to do something, the various sections of the population ought to do still more. The trades and professions benefit in the first place by successful research, and they should do something to endow it. Research in medical science should be encouraged and rewarded by the medical profession; whilst research in mechanical science should be encouraged and rewarded by the engineering interest. If this were done, the State would then be able to assist in the good work; and, in the meantime, Professor Lankester's address has had the effect of

bringing the matter home forcibly to the public mind. Dr. Gladstone approves of making chemistry a subject which may be taught to the elder children in Board Schools, and it is unquestionable that, if a knowledge of the elements of chemistry were common, the result would be advantageous to the lieges, inasmuch as many an evil from which the world now suffers might then be avoided on the strength of a little useful information. Every child should be taught the A B C of chemistry, as well as the A B C of physiology, and the like; and that is why something may be said against chemistry being made a special subject. What is wanted is that every child should know at least a little about chemical science—a basis on which he or she could superimpose more by-and-bye, if circumstances rendered that desirable or necessary. The multiplication of special subjects, only for the few, is a growth which is to be deprecated, in the interests both of the rising generation and of the ratepayers who have to pay for the multiplication. The topic taken by Mr. Palgrave is one to which not even partial justice can be done in this compressed *résumé*. Briefly put, his thesis seems to be that the old age of the honest working-man should be made secure against distressing want and degrading relief; so long, that is, as nothing is done to impair the great principle of self-help. At any rate, he says, we must be prepared to offer better terms than we have hitherto done to those who continue to dwell and work in this country. We venture to think that here is another instance in which the British Association is going out of its way to meddle with a topic with which it has virtually nothing to do. Mr. Palgrave's address was very suggestive, but this is hardly the sort of thing for the furtherance of which the British Association was projected. Allied to it, but very much more to the purpose, was Mr. Brunlees' exposition of the growth of mechanical appliances for the construction and working of railways and docks. Mr. Brunlees showed how much these appliances have done and are doing towards the economising of human labour, concerning which he expressed the hope that the day might come "when the human frame should be relieved of the exhausting labour which makes man a mere beast of burden, and leaves him at the end of his work only fit to lie down and sleep off the effects of his toil and regain strength to continue the same round of labour on the morrow." This is a little Utopian and Quixotic; still, it had a basis of fact and experience to go upon, and it at least had the merit of showing anew, and in a

striking way, the ultimate connection between mechanical science and human life.

In the way of physical science the *savants* had not much this year to tell us. It appears that Dr. MacMunn, of Wolverhampton, has discovered chlorophyll, or the colouring matter of leaves, in invertebrate animals; and several interesting papers were read on protoplasmic phenomena in vegetable life, similar to those observed in the animal kingdom. The former communication was warmly commended by Professor Lankester, and the others were highly praised by Dr. Carpenter, from whom praise in such a matter is "praise indeed." A further discovery was duly announced by the Astronomer Royal for Ireland, who informed his hearers and the public that, according to the most recent researches, the probable distance of the sun from the earth was 92,700,000 miles. Dr. Carpenter himself read a paper on the germ theory of disease, in which he is a believer, and which is certainly supported by full and irresistible evidence. Perhaps, however, one of the most interesting features of the meeting was the report presented by the Anthropometric Committee, which may be said to be so far associated with physical science that it reported on "the height, weight, and other physical characteristics of the inhabitants of the British Isles." Some of the results obtained by it are very curious. It appears that the Scotch stand first both in height and weight. The Irish stand second in height and fourth in weight. The Welsh are next to the Scotch in weight, but after the Scotch, Irish, and English in height. Englishmen take the third place both in height and weight. The average height of Scotchmen is 68·71 inches, of Irishmen 67·90, of Englishmen 67·36. A typical Englishman has a stature of 5 feet $7\frac{1}{18}$ inches and a weight of 11 st. 11 lbs. And that all this has some practical bearing upon life is shown by the fact that the Committee calculate that the minimum standard for Welsh recruits should be two inches lower, and for English and Irish recruits one inch lower, than for Scotch recruits. Moreover, the Committee have discovered that the fishermen of Flamborough exceed the artizans of Sheffield both in stature by three inches and in weight by twenty-four pounds—a powerful testimony to the superior sanitary properties of sea air over town air. By the side of these figures may be placed those put forward by Professor Leone Levi, on the subject of the distribution of wealth in this country. It appears that whilst the average income of all income-tax payers on 150*l.* and up-

wards has decreased from 824*l.* to 544*l.*, the average income of the lower middle-class has increased from 80*l.* to 110*l.*, and the income of the labouring-classes from 52*l.* to 83*l.*, which would seem to show that we are gradually approaching to that "equality" of income at any rate, to which Mr. Matthew Arnold attaches in one of his essays so much mistaken importance. For the rest, we do not know that the meeting of the British Association this year had any remarkable feature, save, perhaps, the discussions on the Euphrates-Valley and Jordan-Valley schemes for making a new road-way to the East. These were considered first from the scientific point of view, namely, as to the practical possibility of achieving either of them. To the railway scheme not much objection was made; but against the canal an eloquent and impressive voice was raised by Canon Tristram, who protested against the proposal to bury for ever, at a depth of from 500 to 1,300 feet, the historic sites of the greatest events of the world—a protest which has found an echo in the hearts of thousands, nay millions, of his fellow-countrymen.

The Social Science Congress this year was fortunate in the presidency of Sir Richard Temple, a man of varied experience and ability. It is difficult to infuse novelty into presidential addresses on Social Science, but Sir Richard, somehow or other, contrived to do so upon this occasion. He took up the unhackneyed subject of the influence of social science, as practised in the United Kingdom, upon the British Empire abroad, and treated it in a manner both fresh and suggestive. Every result, said Sir Richard, which we recognize in the three kingdoms, may be multiplied nine times in our foreign possessions, and if we were to be nationally listless or inefficient here, then a similar listlessness and inefficiency would take root among the vast nationalities in our dependencies. That the example we set at home must very powerfully affect our fellow-subjects at a distance is a proposition which, when we come to look at it, seems obvious, but Sir Richard deserves credit for making it the keynote of his discourse, and for impressing it upon the British public, who are too indifferent, it is to be feared, to the point on which Sir Richard dilated. We are so absorbed in our own affairs that we have, perhaps, less time than inclination to study the condition and prospects of our Empire beyond the seas; and Sir Richard's address will do good if it does but lead to the bestowal of more attention on the influence of British modes of thought and action upon the races who acknowledge the supre-

macy of these islands. Of the Presidents of Sections at the Congress, only three can be described as having made any special mark—namely, Mr. Howard Vincent, Mr. Teale, and Sir Rupert Kettle; and of these Mr. Vincent may be said to have carried off the palm with a comprehensive and suggestive address on the past, present, and future of our system for the repression of crime. This was a very valuable paper, full of interesting facts, and full of thoughtful suggestions. It appears that the cost of the criminal system amounts to something like six millions yearly; no fewer than 74,000 persons being engaged in the work of detection and punishment. Nearly one in every thirty-six of the population is apprehended every year (though only a fourth part of these are charged with grave offences); and it is noticeable that, though the population has grown largely since 1871, the number of convicts under sentence in 1882 was practically the same as the number under sentence in the former year—a fact which seems to indicate that something is really being done to reduce the amount of crime within the borders of the kingdom. Mr. Vincent thinks that still more might be effected if the police were put under a centralized administration; but though the present system undoubtedly has its demerits, it is most unlikely that the provincial municipalities would consent to have the control of the force taken out of their hands. Centralization would have its advantages, but it would also have its dangers. Mr. Vincent is more happy in the approval that he offers to the proposal that prisoners should be allowed to give evidence in court. This has often been suggested, and Mr. Vincent's adhesion to the innovation will do much towards procuring its acceptance. It would be decidedly undesirable that a prisoner should be submitted to cross-examination by the prosecuting counsel, but there could be no objection to his being interrogated by the judge, especially if he were endowed, as he should be, with the right of refusing to reply, if he thought that by so doing he would prejudice his case. Many prisoners, no doubt, would take advantage of that right, but, on the other hand, many would probably be glad of the opportunity of giving their version of the story in which they figured. Mr. Vincent is further of opinion that on his first conviction a prisoner should be more leniently treated, and on his second conviction more severely treated, than at present. There is much force in this, for whereas in the one case the anxiety of the judge should be to give the prisoner a chance of reforming his life, in the other the

judge's anxiety should be to emphasise the public sense of the man's determined guilt. Mr. Vincent dealt, further, with the means to be taken not only to prevent a culprit who has left prison from falling back into his old wicked ways, but to prevent the ranks of the criminal classes from being increased. Cure, certainly, is very important, but prevention is at least equally important, and hitherto far too little attention has been bestowed upon it. Surely in this matter we ought to begin at the beginning, and endeavour to get at the root of the evil, by removing the manifold temptations to crime which now exist? Mr. Teale's address had to do mainly with the effect of the modern system of education upon the health of the people. In Mr. Teale's view that effect is in many respects bad. Much of what we blandly call education is nothing more nor less than "cram," the evils of which have been exposed over and over again, and which is nevertheless as rampant in our midst as ever. Nay, it is questionable whether, with the multiplication of candidates for appointments, and the consequent multiplication of examinations, "cram" has not become more common even than it was. The subject is certainly one which deserves, and will probably obtain, the serious consideration of educational authorities. It is especially desirable that in our elementary schools there should be no undue forcing of the young idea. That children should be started in life with a certain basis of information to rely upon—that is one thing; that they should be turned into the world with premature softening of the brain—that is quite another thing. In Sir Rupert Kettle's address the chief point was his suggestion that, in the last stages of their training, art students should pay more attention to the ultimate use to which their attainments are to be put—a suggestion which they will do well to take to heart. Sir Rupert also showed that, in the results of the art education of the day, the country is receiving full value for the money it is expending in that direction.

Art and Education naturally formed the topics of more than one interesting paper and valuable discussion in the sections. The Rev. Brooke Lambert introduced the subject of the artistic embellishment of school-houses, Mr. Clifford Allbut dealt with that of competitive examination, and Mr. Frank Curzon read an essay in favour of night-schools. Mr. Lambert's interpellation was in connection with the Art for Schools Association, whose object it is to distribute pictures and engravings and the like for the adornment of the walls of the rooms in which children study. The

idea is that the eye should early be accustomed, if possible, to the contemplation of beautiful things; and there can be no question that impressions made in early life are as nearly as possible ineffaceable. How desirable, then, is it that those impressions should be of a pleasant character! Once imbued with a sense of beauty, the mind will ever after seek to secure for itself beautiful surroundings, with the result, if the sense in question could be widely diffused, of turning Englishmen as a body into an artistic nation. Circumstances in individual cases might prevent the attainment of the ideal, but it would be something if that ideal were only striven after. On competitive examinations Mr. Allbut had, of course, not much that was new to say, but his paper would not be without its due effect. That night-schools, again, are useful as a means of continuing the education gained at Board Schools, is a thesis which Mr. Curzon had no difficulty in enforcing. Night-schools are, no doubt, "a boon and a blessing" to thousands; but, on the other hand, it is possible to overdo that sort of thing. The thirst for information is very commendable indeed; but if a boy, a youth, or a man, is hard at work at his trade or profession during the greater portion of each day, it is for him to consider whether his evenings ought not to be devoted, for the most part, to rest and recreation. On the other prominent topics discussed in the sections we can only touch but briefly, seeing that they ranged from the land system to the milk trade, from blasphemy to the fish supply, and from bankruptcy to the custody of children,—a bewildering variety with which, in the limits of this article, no attempt can be made adequately to cope. One can only commend in general terms the tone and results of the debates, which, on the above-named subjects, were practical and marked by common-sense. As Mr. Barker truly said, "a sound landed system lies at the root of natural prosperity." Moreover, "if capital is to be attracted to the cultivation of the soil, this result is to be attained not by startling innovation, but by gradually uprooting from the law of real property the manifold complications which prevent it from adapting itself to our growing social necessities." On another of the topics named, Dr. Blake Odgers ably argued that there must be some provision for the prevention of blasphemous libels which give wanton and unnecessary offence to the highest and noblest instincts of our nature. Blasphemy may be said to be as much an offence against man as against God. In the discussion on the milk trade it came out that there had recently been eighty-two

zymotic epidemics, affecting upwards of 5,000 persons; and that was rightly accepted as a reason why prompt measures should be taken to arrest the spread of such diseases. This, the Congress affirmed, could best be achieved by transferring the regulation of dairies and dairy-farms from the Privy Council to the Local Government Board, and from the veterinary to the sanitary authorities; and, likewise, by the issue of bye-laws for the licensing of milk-sellers, and the compulsory notification of infectious diseases. The main thesis of Mr. W. M. Adams, who discussed the fish supply of the United Kingdom, was that for the attainment of cheapness we must look less to the increased distribution of fish than to the increased supply. More fish must be caught; and Mr. Adams suggested, among other things, that protection should be accorded to the estuaries and other parts of the shore where fry are found in large quantities, and where, caught by thousands in the net, they are thrown back dead into the water. This paper was one of the most universally interesting read at the Congress. On the Bankruptcy question, Mr. Chadwick expressed the opinion that no trader who had failed a second or third time should be allowed to recommence business until he had paid twenty shillings in the pound—a very reasonable proposition. Concerning the custody of children, there was a general consensus of opinion to the effect that, if a husband deserted his family, he should not be allowed to take the children away from the mother. On the other hand, one of the speakers argued that, so long as a husband maintained his proper place in the household, he ought to have the exclusive right of determining how the children should be brought up and educated. That there is room for some alteration in the present law may be freely conceded.

Of the remaining Congresses of the year (other than the ecclesiastical), that of the Trades Unionists is the only one in which the general public can be said to be specially interested. The Chambers of Commerce, the Iron and Steel Institute, the British Medical Association, and the Librarians, all have to do with topics which have attractions for sections of the population, but the ordinary readers of the newspaper pay but little heed to their deliberations. The latter three confined themselves this year almost wholly to matters relating to their own internal economy. The Institute discussed the present and future of the two trades with which it is connected, and the doctors and librarians busied themselves wholly about their own

affairs. The Chambers of Commerce declared in favour of a second Canal-way to the East, and passed resolutions with regard to parliamentary bills, the decimal system, a Minister of Commerce, railway tickets and time-tables, and the carriage tax, most of these resolutions being very sensible and useful. But, as we have said, the Trades Union Congress is the one gathering, after that of the British and Social Science Associations, to whose proceedings the public as a body devotes the most time and thought. It represents, undoubtedly, a very large and important class of the community, and though, as has been shown, it is inclined to go somewhat far and frequently out of its sphere, its conclusions are in many cases deserving of careful consideration. This year it has expressed itself as in favour of more inspection, more co-operation, more arbitration, more technical education, and shorter hours of labour. The last named is too large and complicated a question to treat of here, but on the other points the decision of the congress may, in general terms, and without considering details, be cordially commended. There is yet much to be achieved towards placing the inspection of our mines, factories, and workshops on a satisfactory footing. The inspections are not numerous enough; nor are they always of the kind that is desirable; nor is the system of inspection, as it exists, adequate for the purposes to which it is applied. To co-operation, again, no objection can be made, so long as it works for objects, and by means, which are legitimate. As time goes on, we see how well justified were the remarks on co-operation which Lord Beaconsfield put into the mouth of certain characters in his last romance. Of arbitration in trade matters there can scarcely be too much; and as for technical education, it is the most urgent want of the day. Of book-learning there is, for all classes, enough, and sometimes more than enough; our Schools of Art are attending to the art education of the nation; and what is most required now is the means of instructing the younger members of the poorer classes in the elements, at any rate, of purely technical work. This was done in the old days by the trades guilds; nowadays it must be done by the municipalities or by the nation,—by the municipalities preferably. Every large town should have its Technical College. "University extension" is excellent, is salutary; but it is the instruction of the masses in the details of the various handicrafts —those in which we are beaten by the foreigner—that is the most pressing topic of the time.

W. Davenport Adams.

THE MUSIC OF THE YEAR.

UNMUSICAL England, as it is still the fashion to term the country which gives not only a welcome but the means of livelihood to artists of every nationality, and which supports three musical academies of no mean importance, has passed through a season of exceptional activity in the year which is closing upon us as we write. The opening of the Royal College of Music; the holding of the eighth of the triennial Handel Festivals at Sydenham, and of two other triennial music meetings at Leeds and Wolverhampton; these may, without fear of contradiction, be termed events of the first magnitude, and in addition we have the usual long array of minor festivals, operas, and concerts. The commencement of regular work at the Royal College at South Kensington was marked by a simple businesslike ceremonial on the 7th of May, in which the Prince of Wales took the chief part, and it was followed by a sort of afterglow of royal recognition to the director and two other eminent musicians, reminding one somewhat perhaps of the French system of crowning not only the *lauréats* of the Conservatoire, but the Professors to whose training the winning of the laurels is due. If knighthood is not exactly suited for bestowal upon men of art and letters, it is at least on a par with the decoration of the Legion of Honour, and until the Order of Merit which the late Prince Consort is said to have desiderated for the reward of the non-combatant heroes of his adopted country, is called into existence, it will probably continue to be used as a substitute for something better. That Sir George Macfarren should at first have declined the proffered dignity excited no surprise among those who were acquainted with the workings of the situation out of which the Royal College of Music had been evolved, but ultimately the Cambridge Professor agreed to be dubbed "Sir Knight," and with Dr. Grove and Dr. Arthur Sullivan accepted the title.

The Royal College of Music occupies the house at Kensington Gore, S.W., formerly held by the National Training School. It is incorporated by Royal Charter, granted July 10, 1883, The government is vested in a council, viz., Prince of Wales (President), the Duke of Edinburgh, K.G., Prince Christian, K.G., the Archbishop of Canterbury, the Archbishop of York, the

Duke of Westminster, K.G., Earl of Cadogan, Lord Charles Brudenell-Bruce, M.P., the Right Hon. Sir Lyon Playfair, K.C.B., M.P., Sir Thomas Gladstone, Bart., Sir Richard Wallace, Bart., K.C.B., M.P., Sir John Rose, Bart., G.C.M.G., Sir Thomas Brassey, K.C.B., M.P., Sir Julius Benedict, Mr. Thomas P. Chappell, Mr. Otto Goldschmidt, Mr. Charles Hall, Q.C. (Attorney General to H.R.H. the Prince of Wales), Mr. E. W. Hamilton, Mr. Charles Morley, Mr. Kellow Pye, Dr. Stainer, Baron Ferdinand Rothschild, Sir Henry Thring, K.C.B., Sir Arthur Sullivan, and Mr. W. G. Cusins. The council acts through two committees—an executive committee and a finance committee. Mr. Charles Morley is Hon. Secretary, and Sir George Grove, D.C.L., Director. There are 50 scholars, male and female, of whom 35 receive education, 15 education and maintenance. There are also 72 paying students. Seven of the scholarships were founded by individuals, viz., Miss Courtenay, Sir Erasmus Wilson, Mr. Samuel Morley, M.P., Lady Harvey, Sir W. J. Clark, Bart. (Melbourne), Sir Thos. Elder (Aldelaide), Mr. W. Gilstrap, the rest by public subscription. They are obtainable by public competition only. The teachers are as follows: Pianoforte, J. F. Barnett; Flute, W. L. Barrett; Counterpoint and Organ, *J. F. Bridge, Mus. Doc. Oxon.; Singing, *H. C. Deacon; Conductor of Choral Practice and Pianoforte, E. Faning; Viola, Alfred Gibson; Pianoforte, Arabella Goddard; Military Music and Organization of Military Bands, Charles Godfrey; Violin, R. Gompertz; Trumpet and Cornet, T. Harper; Violin, *H. Holmes; Oboe, G. Horton; Violoncello, F. Howell; Declamation (Female Scholars), Madge Kendal and Mrs. Arthur Stirling; Singing (Male side), R. Latter; Clarinet, H. Lazarus; Singing (Female Scholars), *Jenny Lind-Goldschmidt; Horn, Thos. E. Mann; Organ, George C. Martin, Mus. Doc.; Italian Language, G. A. Muzzucato; Singing, Elisa Mazzucato; Trombone, S. Millar; Organ, *W. Parratt, Mus. Bac. Oxon.; Musical History and Composition, *C. Hubert H. Parry, Mus. Bac. Oxon., Mus. Doc. Cantab.; Pianoforte, *Ernst Pauer, F. Cliffe, T. Kemp, Edith Jerningham, Helen Syner; Composition, Conductor of Orchestral Practice, *C. Villiers Stanford, M.A. Cantab.; Pianoforte, *Franklin Taylor; Harp, John Thomas; Singing, *A. Visetti, Gertrude Mayfield; Double Bass, Adolphus C. White; Bassoon, W. B.

* Member of the Board of Professors.

Wotton; Harmony and Pianoforte, Alfred T. Caldecott. Each pupil has two lessons a week in his principal study, one in second study, one in harmony, declamation, and Italian, and has to attend the choral class, the *ensemble* playing, the lectures on history and other subjects.

In its older homes musical education is being carried forward as earnestly as ever, and the Royal Academy still remains the favourite school for professional students. The civic institution, aptly entitled "The Guildhall School of Music," continues to draw within its walls an immense number of pupils, many of them coming from the neighbouring warehouses and offices, to receive their lessons during the evening. The moderate scale of fees charged at the school serves to bring musical education of the highest class within general reach, and the success of the scheme ought to encourage other corporations to follow in the same track. Already an attempt has been made to work on similar lines in the little Hertfordshire town of Watford, where a local music school has been established, the cost being defrayed from the public rates by an ingenious application of the Free Libraries Acts. Readers of the "Companion" may remember that in the volume for 1878, a suggestion was made in the notes on the Music of the Year, that under the terms of this statute organs might be provided in the vestry halls of any parishes where the ratepayers were sufficiently enlightened to tax themselves for such a purpose. Writing on the subject shortly after, the *Athenæum* while entirely approving of the object in view, expressed doubts as to the legality of such a means of attaining it, but judging from the proceedings at Watford a still more extensive plan has been carried into execution. Remembering that in France music is taught on a system directly under the control of the civic authorities, and maintained at the public cost, and that in nearly every continental city of any importance musical education is freely subsidised, it is difficult to see why some measure of "Local Option" should not be permitted in this direction.

In a more severe form and on a more limited scale musical education has been carried forward by the Association devoted to "the Investigation and Discussion of Subjects connected with the Art and Science of Music," which has, as the present volume is being sent to press, entered on its tenth session. During the session closed in June last, and reported upon at the annual meeting at the end of October, eight papers were read. In the

first, a brief essay "On the Fallacy of the Repetition of Parts in the Classical Form," Mr. Ferdinand Praeger argued in favour of the entire abolition of all part repetition in music of the highest class. In dance music and other rhythmical composition he would still permit the repeating formula, on the ground that in such works the music itself holds but a subordinate position; but in the compositions of the great masters he condemns it as inartistic and needless, and declares his conviction that in future generations it will excite as much risibility as is now created by the ponderous wigs of Bacon and Handel, or the pigtail of Frederick the Great. Mr. Praeger was somewhat severely handled in the subsequent discussion by the Chairman of the afternoon, Mr. E. Prout, who supported the old masters, and cited as a proof of the undesirability of omitting repeats, Liszt's Sonata in B minor which he had just heard Mr. Walter Bache play, and in which Mr. Praeger's desires were completely met; for there was no repetition at all, the result being, according to Mr. Prout, that he was not able to follow the sonata. Mr. Praeger was, however, able to secure a general concurrence as to the viciousness of repetitions when due to mere fashion, the main argument against the universal adoption of his proposal being, that in a first movement of a sonata or kindred work it is desirable to make the exposition of the subjects perfectly clear, in order to impress them on the ear. At the second meeting, Mr. G. N. Carozzi offered some "Practical Suggestions on Vocal Culture," based on long practice as a teacher. Vocalism, in the sense in which it was understood by some of the more famous artists of past days was now, he argued, almost unknown, a result due partly to the early period at which students are allowed to sing in public, and partly to the tonal height of modern compositions, which offer openings for effect from mere strength of voice, the beautiful art of "il bel canto" being left out of question. He closed his paper by a description of the "Orthophone," a mechanical contrivance to accustom the pupil to a proper opening of the mouth, in order to keep it invariable for all the sounds, to prevent contortion of the lips and also the movement of the lower jaw; and, in conjunction with it, he spoke of the glossotone as intended to control the tongue.

At another meeting, Mr. Baillie Hamilton's new musical instrument, the vocalion, was exhibited, and, in the inventor's absence, Dr. J. F. Bridge gave an account of his experience of its recent use on two occasions at Westminster Abbey. Its tone,

he said, was charming, and although it lacked variety, and could never, as some persons anticipated it might have done, supply the place of the organ, it would be decidedly useful. Professor Grylls Adams held that by combining the reed loaded with wire with the current of air in such a way as to subdue the harsh tones of the reed, Mr. Hamilton had effected great improvements in his instrument, and had produced from it beautiful mellow tones. Several musicians of eminence concurred in attributing to the tones of the vocalion a far reaching power, its chief defect being described as weakness of bass, and its middle register being its most satisfactory part. A practical subject of very general interest,—"Woman in relation to Musical Art,"—was submitted to the meeting in May by Mr. Stephen S. Stratton, who held that the consideration of the matter must eventually narrow itself to the question whether woman could produce a great composer, and he assumed that up to the present she had never done so. He proceeded to contend that if woman in the vast sphere of work open to her,—physical and intellectual—has achieved greatness in every department where her faculties have been fully developed, and had free play—an assertion which he held to be capable of proof—then there is no reasonable ground for assuming that she cannot excel in any art under like conditions. In literature, Mr. Stratton asserted that women had vindicated their intellect; in painting and sculpture they had attained high fame; and if in these arts they had not reached the high position they had achieved in literature it must be ascribed not to incapacity for art, but to what evolutionists call arrested development, and, in proof of this, he cited woman's success on the stage, where she had enjoyed greater freedom. Turning to purely musical excellence, Mr. Stratton claimed for women equality with men as executants, but found it impossible to cite similar success in composition, and proceeded to ask why there should be this failure, his answer being practically that which he advanced at the outset, that defective education and the lack of a fair chance had prevented her from coming to the front. Mr. Praeger argued that there were distinctions in the brain power of men and women which must always prevent women from becoming great composers; but Mr. Meadows White, Q.C., the husband of a lady favourably known as a composer, declared his belief that the reason of the failure of ladies as composers was partly because they had not studied composition as perfectly as men. Mr. T. L. Southgate harmonized

the different opinions advanced by usefully reminding the Association that even among men great composers are very rare—that geniuses have to be born not made, and that Providence may yet make a woman a genius as a composer. We have only space to mention the more technical papers on "Musical Æsthetics," by Mr. E. Breakspeare; on "Some Practical Bearings of the Study of Acoustics upon Musical Art," by Mr. James Turpin, Mus. Bac., Cantab., and the lively and versatile gossip of Mr. G. A. Osborne, entitled "Musical Coincidences;" but this brief retrospect of the proceedings will be enough to show that the Association is continuing to do useful work. It is, we think, open to question whether papers from musicians resident out of London or its vicinity might not with advantage be invited, and certainly many leading members of the profession who have as yet made no contributions to the "Proceedings" might justly be expected to do so. It may be useful to add that the Secretary of the Association is Mr. James Higgs, the well-known organist of St. Andrew, Holborn, and that the "Proceedings" can be obtained from Messrs. Stanley Lucas, Weber, and Co., of New Bond Street.

The College of Organists which has nearly completed in a quiet, unostentatious, but persevering way, a useful career of about 20 years, has now, scattered throughout the kingdom, America, the colonies, and other countries over 300 members, including almost all English organists of any note and position, and some of the most distinguished organ players abroad. There can be no doubt as to the value of the work done by the College for the cause of music and for the rising generation of church organists, and carefully conducted examinations held half yearly have been a notable means to this end. These examinations are indeed unique in their way, as embracing not only all the higher theoretical departments involved in the work of the University musical examinations, but severe practical tests in organ playing, both from the solo and service-accompaniment points of sight. They are conducted by six examiners of the highest professional rank; and so it has come about that to be a Fellow of the College, or even to hold the secondary rank of Associate, is to be recognised as an organist not only fully equipped for his life's work, but starting with a real professional distinction attached to his name. The College further supplies excellent courses of lectures, and has a valuable library of reference, while it naturally offers many advantages to young

organists in the friendships they may form within its walls with the chiefs of their profession. The labours of the College in connection with the recent conference on organ building, &c., were fruitful in good results in the way of securing greater uniformity as regards the playing mechanism, and a consequent increase of security as to accuracy of performance. Two signs of the steady growth of the institution must be mentioned. The average number of candidates for the examination 10 years ago was about 16, now it has reached 60 and 70 every six months, while in the second place the College has gained a secure financial position.

Turning to the field of musical performance, the year has seldom been equalled in interest. Apart from the Handel Festival, at which the audience numbered 87,769, several thousands in excess of the attendance on any previous occasion, the provincial Festivals possessed many features of interest. At Leeds the honours were shared by English and Continental composers. "The World's End, The Judgment, The New World," the new "Symphony Oratorio" of Joachim Raff, the lamented Hungarian, whose early death deprived the committee of his services as the conductor of his work, taking its place with Sir George Macfarren's oratorio "King David," Barnby's "97th Psalm," and Cellier's setting of Gray's "Elegy." Sir Arthur Sullivan was the conductor of the Festival, at which the Duke and Duchess of Albany were present. At Gloucester, where the Three Choirs held their meeting, two new sacred works formed the novelties of the scheme, Dr. Stainer's "St. Mary Magdalen," and Mr. G. B. Arnold's "Sennacherib." The work of the organist of St. Paul's Cathedral received considerable praise from the critics. At Wolverhampton the main point was to secure a programme that would draw a large audience, and this result was attained without the production of any new works.

In London the operatic stage was occupied in the spring by Mr. Carl Rosa, whose admirable company appeared at Drury Lane, and produced two new works by English writers: Mackenzie's "Columba," which was unanimously voted a success; and the "Esmeralda" of Mr. Goring Thomas, which was also received with favour. The only Italian Opera of the year was at Covent Garden, where under Mr. Gye's direction and with Signor Bevignani and M. Dupont as conductors, Ponchielli's new score "Gioconda" was produced, and attained a wide popularity. In the twelve weeks of the season there were sixty-

four performances, at which twenty-four works were heard, but nothing worthy of note occurred.

In the concert room the Crystal Palace led the way as noticeably as of yore with its unrivalled Saturday afternoon programmes under the direction of Mr. Manns. English composers were not excluded from the list of new works which had the privilege of performance by the fine band, and Mr. F. H. Cowen's Suite in D for strings, and Wingham's Fourth Symphony were heard with interest. A somewhat gloomy afternoon was spent over the "Messe des Morts" of Berlioz, and far more genuine interest was excited by the Seventh Symphony of Schubert, which had been completed by Mr. J. F. Barnett, its composer having left the score unfinished. The oldest orchestral body now remaining in London—the Philharmonic Society—also did its best to impart variety to its performances by unearthing a motet of Cherubini's, and giving a selection from Liszt's oratorio, "Christus." During the season it became known that the series of concerts would be the last conducted for the Society by Mr. W. G. Cusins, and the course which will be adopted in the ensuing season will be, we hear, to invite a separate conductor to direct each concert. The year witnessed the revival of the Sacred Harmonic Society under the auspices of a limited liability company, with Mr. Charles Hallé as its conductor, and Mr. W. H. Cummings as chorus master. It commenced operations with a performance of Gounod's "Redemption,' and Schubert's Mass in E flat followed. A kindred society formed by Mr. Willing, the last organist of the older Sacred Harmonic Society, gave several concerts. Working on classic lines the Bach Choir produced Palestrina's "Missa Papæ Marcelli" at its first concert, when Dr. Stainer conducted in Mr. Otto Goldschmidt's absence, and at the second Herr Max Bruch conducted a performance of his own cantata "Odysseus," a work which an eminent critic characterized as being utterly wearisome. Mr. Barnby maintained the concerts of the Royal Albert Hall Choral Society, and superintended the first performances of a new body of amateurs, "The London Musical Society," by whom Dvorak's "Stabat Mater" was given for the first time in this country. The St. Cecilia Society, directed by Mr. Malcolm Lawson gave a hearing during the season to Pergolesi's setting of the same old hymn. Among the new enterprises of the year, that of the Handel Society deserves prominent mention, its object being to perform the little known works of the master. Mr. F. A. W. Docker,

who has been organist and choirmaster of St. Andrew, Wells Street, since Mr. Barnby retired from the post, is the conductor, and the programme of the first season included selections from "Belshazzar" and the "Water Music." The construction of Mr. Henry Leslie's choir with Signor Randegger as its conductor brought back to the London season the welcome programmes of unaccompanied part music, associated with the first conductor's name. If the concerts can be maintained on a self-supporting basis, the choir will continue its useful and popular work. Another choir identified with its conductor's name, that of M. Geaussent, gave some very creditable performances, at one of which "The Charge of the Light Brigade" by Mr. Hecht, a musician well known in Manchester, was given. The South London Choral Association, although local in title, gave its concerts at St. James's Hall, and won high praise for its part singing. This brief record proves that choral music is yearly finding not only an increased number of competent performers, but a growing and appreciative audience. In addition to these performances by societies and conductors established in the metropolis, the splendid Richter concerts gave a welcome variety with its fine orchestral programmes.

Instrumental music for the chamber finds fewer exponents in the metropolis, and the discontinuance of Professor Ella's Musical Union Matinées is a real loss. The Monday Popular Concerts hold on their way, and during the season many important works obtained a first hearing. Among these, we may name Spohr's Quartet in E flat, Op. 98; a sonata for pianoforte and violoncello, by Gernsheim; a new Quintet in F, by Brahms; and a pianoforte Trio, by Schumann, in G minor, Op. 110. Complaint was made in several quarters, not, as our readers will probably think, without reason, that, at the forty-one concerts, Mr. Chappell did not find room for a single work by an English writer. Mr. Hallé and Mr. Henry Holmes gave some interesting chamber concerts, at one of the latter of which Brahms' String Quintet in F, Op. 88, was heard.

In the suburbs of London some noteworthy efforts were made. At Shoreditch Town Hall the Borough of Hackney Choral Society, conducted by Mr. E. Prout, brought forward Mozart's music to "King Thamos." In the provinces, Mr. Hallé, at Manchester, and Mr. Riseley, at Bristol, did good work. At the Universities, the greater energy shown in the musical faculty still bears much fruit. The Cambridge Union Musical

Society, under its able conductor, Mr. Villiers Stanford, whose music is rapidly winning way on the Continent, produced a new Symphony in F, by Mr. H. Hubert Parry. At Dublin, under Professor Sir Robert Stewart, the University Musical Society performed with full orchestra and chorus Carissimi's "Jonah," re-scored by the Professor, and Gade's "Psyche," both for the first time. The concerts which are given within the walls of the university are managed by a committee of students and graduates. At the newly-formed University of South Wales, Mr. Templeton, an assistant to Mr. Farmer, the well-known "music-master" of Harrow, has been appointed Professor of Music.

In musical journalism, the birth and death of the "Musical Review," published by Messrs. Novello, Ewer, and Co., has to be recorded. It lived even for a shorter time than the same publishers' "Concordia," issued some years ago. A new penny musical monthly on the American model, containing a portrait, and several pages of music for voice, piano, and other instruments, has been started by Messrs. Pitman and Co. In Germany, the well-known "Allgemeine Musikalische Zeitung" has ceased to exist.

In musical literature we have to welcome some additional parts of Sir George Grove's "Dictionary of Music and Musicians;" several new volumes of Messrs. Sampson Low and Co.'s admirable series "The Great Musicians," and other works.

The obituary of the year includes several great names: Wagner, Flotow, and Volkmann, among composers; Adrien Boieldieu, son of the composer of "La Dame Blanche," and himself an able musician; Von Lenz, the writer on Beethoven; Signor Schira, a well-known teacher; and, among ourselves, the Rev. Scotson Clark, a clever organist and writer; and Miss Orridge, a promising young contralto singer.

ENGLISH PHILANTHROPY IN 1883.

THE publication of a pamphlet with the sensational title of "The Bitter Cry of Outcast London," and its reception by the press as a legitimate description of wrongs really existing and for the existence of which the nation, if not the State in its corporate capacity, is responsible, may well be regarded as a proof that the occupation of the philanthropist is not yet gone. Whether the writer of that pamphlet has or has not, as Mr. Sims, the popular play writer and journalist affirms, reproduced some of the typical cases of misery which he had described in the "Pictorial World," matters but little as far as our present purpose is concerned, for in either case the fact remains that amidst our unbounded wealth, with religious bodies of every variety of creed working and interworking, with a poor-law which if still faulty is costly enough to entitle us to look for efficiency in its administration, we are still face to face with a ghastly spectre of unrelieved want and of distress which is not always bred of crime or idleness. With such a condition of things before us it is satisfactory to be able to point to a sensible growth of the public faith in charity organization and in the wisdom of discriminating benevolence. Concurrently with this mental assent to a sound principle of relief we note a decided falling off in the number of new charities created; in fact no society on any large scale has been established during the year, and this we believe is to be attributed not to any desire to shorten the hand of public benevolence, but to a wish to save needless outlay on offices and machinery, and to utilise existing agencies. There is thus distinct cause for congratulation even in the cursory survey which we are able to take of the field of English philanthropy, and we see good reason to hope that the improvement which has hitherto been partial may become general.

There has been no addition to the number of the London Hospitals during the year, but the North West London Hospital at Camden Town has entered on the use of larger premises, and a plan for the establishment of a new hospital in that district has been discussed. The latter scheme which at the outset received the adhesion of many influential men, failed to secure the Duke of Westminster's sanction, and it is fairly open to question whether, with so many hospitals literally struggling for

existence, and several in North London itself, which are often in want of funds, it would be wise or just to add to the list.

The Metropolitan Free Hospital, for instance, is much in need of funds to build its new premises in De Beauvoir Square, where 150 in-patients will be accommodated if money is forthcoming to complete the premises. The Hospital for the Paralysed and Epileptic, in Queen Square, Bloomsbury, an institution which does an almost unique work among a class of sufferers who most sorely need help, is at the present moment absolutely houseless, and lacks the necessary funds to carry out the rebuilding scheme. A strong case can also be made out for supplying the Great Northern Hospital with the aid which it needs, and for enabling the North Western Hospital to enlarge its building, and if two or three hospitals for paying patients, on the Bolingbroke House model, could be established, we believe that the alleged want of accommodation would cease to be felt. The scheme for the erection of the new hospital for Greenwich and Woolwich is being steadily worked out. While referring to the provision of Hospital accommodation, it may be of interest to give, as usual, a table showing the results of the Hospital Sunday Fund Collections, from which it appears that the year 1883 was only a little below the previous year in the amount received.

1873	£27,700	1878	£24,904
1874	29,936	1879	26,501
1875	26,396	1880	30,404
1876	27,042	1881	31,000
1877	26,083	1882	34,424
1883	£33,935		

In the list of new institutions established during the year the principle of self-help, and of the use of social and moral influences as a safeguard against evil, has been most noticeable. Such a Home, for instance, as that for Working Girls, in Soho, cannot be too highly commended; and, in another direction, the Club for Working Lads, in East London, is an admirable institution, well calculated to serve the end in view. In these institutions self-respect is taught, thrift is encouraged, morality is given its rightful place, and there is no restriction as to the religious creed of the candidates for membership. The need for such preventive agencies increases year by year, as the number of immigrants into the big cities grows with the growth of the population, and in their working the underlying principle of all true philanthropy, in the devotion of personal service to the end

in view, is secured. In the same way, but going down to a still lower stratum of the population, the Church of England's Central Home for Waifs and Strays deserves to be mentioned: the idea being to establish one or more receiving houses in each diocese where homeless children—a considerable element in "Outcast London"—may be taken in and cared for. There are those, of course, who would argue that such a Society usurps the function proper to the Poor Law agency and the Board of Guardians, but this is after all a lame objection, and proves that its authors have never realised the amount of moral contamination which results from association with persons of the ordinary workhouse type.

Next to separation from evil surroundings at home, there is no better means of expending philanthropic effort in the interests of the unemployed or destitute poor than to assist them to emigrate, and in this direction there has been much movement during the year. Among the societies established with this object, one of the most important is the Central Emigration Society, which has its offices at 15, Buckingham Street, Strand. It is not perhaps generally known that, under the existing Poor Law Acts, unemployed labourers may apply to a Board of Guardians for means to emigrate, whether they are in receipt of parish relief or not, even if they have no settlement in the parish from which they ask assistance. To secure the more general carrying out of this important provision, the Committee of the Central Society advise recourse to the President of the Local Government Board; but they also suggest a scheme to assist those who would not emigrate under the Acts just named. Their proposal is to raise a fund of 10,000*l*. by public subscription, to be distributed not as a gift, but, through the various branches affiliated with the Central Society, in the form of a loan or advance fund, to be repaid by the emigrant within one year of his arrival in the colony. To ensure this repayment, applicants must, as far as possible, find securities among their own friends in this country; but the Emigration Society would also endeavour to re-collect these advances through their colonial agents, from employers of labour or from holders of land grants. They further propose that application offices should be at once opened in all parts of the British Isles, at which trustworthy information would be supplied. Several other societies have been working steadily to promote emigration during the year, and an effort is being made to secure State aid for the purpose.

The publication by the Charity Organization Society of their long-promised "Charities Register and Digest" is an attempt, following on the lines of "Low's Handbook to the Charities of London," to present a classified register of the charities in or available for the metropolis, while it also aims at supplying a digest of information respecting the legal, voluntary, and other means for the prevention and relief of distress and the improvement of the condition of the poor. A cursory glance at the book is enough to show that the objection felt by some of the societies to the method of the Charity Organization Society has proved an obstacle to the secretary in his collection of information respecting the various funds, and it is probable that he will always find considerable difficulty, from this cause, in obtaining complete details as to the receipts and expenditure. All, however, who know anything of the labour involved in the compilation of such a work will admit that Mr. Loch must have used very considerable energy to bring the volume even to its present state of completeness. As a contribution to the bibliograghy of the London charities—and it is now becoming quite a literature of itself—we may point out that Mr. Loch, by some singular error, or from want of knowledge, has completely misrepresented the handbook of Mr. Low, classing it as an annual guide-book after Mr. Fry's work. As a matter of fact, the "Charities of London" was in its original form an elaborate treatise, giving a history of the chief institutions, and no mere handbook. In an exhaustive article on the "The Charities and the Poor of London," published in the "Quarterly Review," No. CXCIV (September, 1855), the writer referred to the book of the late Mr. Sampson Low, jun., issued in 1850, which numbered no less than 450 pages; in fact, it was upon this work that the article was based. Mr. Loch, on the contrary, while admitting that "a word of recognition is due to those who have been forerunners in this work," talks of Mr. Samuel Gurney's "Register of Charities," commenced in 1862, as if it was the first of the class. If he will go to the British Museum Library and look at the earliest edition of Low's book, he will find that it was in effect an anticipation of the volume before us.

The most valuable part of Mr. Loch's book is the Introduction, in which he has digested much valuable legal and general information.

TABLE OF ALL THE PUBLIC GENERAL ACTS

PASSED IN THE FOURTH SESSION OF THE TWENTY-SECOND PARLIAMENT OF GREAT BRITAIN AND IRELAND.

46 & 47 VICTORIA. A.D. 1883.

(The Acts are given in the order in which they were passed, the number denoting the chapter. An abstract of those Acts distinguished by an asterisk is given in the pages following this table, which contain a classified epitome of the more important statutes passed during the session.)

1. An Act to amend the Consolidated Fund (Permanent Charges Redemption) Act, 1873.

(Amends 36 & 37 Vict. c. 57; Consolidated Fund (Permanent Charges Redemption) Act, 1873.)

2. An Act to apply certain sums out of the Consolidated Fund to the service of the years ending on the 31st day of March, 1882, 1883, 1884.

3. An Act to amend the Law relating to Explosive Substances.

(Applies 38 & 39 Vict. c. 17; Explosives Act, 1875.)

4. An Act for enabling the Trustees and Director of the National Gallery to lend Works of Art to other Public Galleries in the United Kingdom.

(Authorises loan of Works of Art.)

5. An Act to apply a sum out of the Consolidated Fund to the service of the year ending on the 31st March, 1884.

6. An Act to provide, during twelve months, for the Discipline and Regulation of the Army.

(Continues, and amends, 44 & 45 Vict. c. 58; Army Act, 1881.)

7. An Act to amend the Bills of Sale (Ireland) Act, 1879.

(Amends 42 & 43 Vict. c. 50; Bills of Sale (Ireland) Act, 1879.)

8. An Act to amend the Glebe Loans (Ireland) Acts.

(Amends 33 & 34 Vict. c. 112;
" 34 & 35 Vict. c. 100;
" 38 & 39 Vict. c. 30;
" 41 & 42 Vict. c. 6;
" 43 & 44 Vict. c. 2.
} Glebe Loan (Ireland) Acts, 1870 to 1880.)

9. An Act to make further provision for taking dues for repairing and improving the Harbours in the Isle of Man.

(Construes Act with 35 & 36 Vict. c. 23; Isle of Man Harbours Act, 1872.
Amends, and applies, 10 & 11 Vict. c. 27; Harbours, &c. Act, 1847.)

10. An Act to grant certain Duties of Customs and Inland Revenue, to alter other Duties, and to amend the Laws relating to Customs and Inland Revenue.

(Grants Import Duties on Tea.
Amends 39 & 40 Vict. c. 36; Customs Consolidation Act, 1876, as regards certain explosive substances.
Alters date of expiration of certain game licences and gun licences taken out under 23 & 24 Vict. c. 90; Game Certificates, &c., Act, 1860, and 33 & 34 Vict. c. 57; Gun Licence Act, 1870.
Grants duties of Income Tax, and applies former Acts.)

*11. An Act to provide for Expenses incurred by Guardians of the Poor in relation to Poor Law Conferences.

(Provides for expenses incurred by guardians of the poor in relation to Poor Law Conferences.
Applies 42 & 43 Vict. c. 12; Poor Law Act, 1879.)

12. An Act to amend the Act for the Prevention of Crime in Ireland, 1882, as to the Audience of Solicitors.

(Amends 45 & 46 Vict. c. 25; Prevention of Crime (Ireland) Act, 1882.)

13. An Act to apply the sum of £5,973,912 out of the Consolidated Fund to the service of the year ending on the 31st March, 1884.

14. An Act to amend the Laws relating to the Pay and Pensions of the Royal Irish Constabulary and the Police Force of Dublin Metropolis; and for other purposes.

(Amends 37 & 38 Vict. c. 80; Constabulary (Ireland) Act, 1874.
" 10 & 11 Vict. c. 100; Constabulary and Police (Ireland) Act, 1847.
" 34 & 35 Vict. c. 76; Summary Jurisdiction (Ireland) Amendment Act, 1871.
Applies 6 & 7 Will. 4, c. 29.)

15. An Act to amend the Lands Clauses Consolidation Act, 1845.

(Amends 8 & 9 Vict. c. 18; Lands Clauses Consolidation Act, 1845.)

*16. An Act to grant a sum of money to Admiral Baron Alcester, G.C.B., in consideration of his eminent services.

(Grants £25,000 to Baron Alcester.)

*17. An Act to grant a sum of money to General Baron Wolseley of Cairo, G.C.B., G.C.M.G., in consideration of his eminent services.

(Grants £30,000 to Baron Wolseley.)

18. An Act to make provision respecting certain Municipal Corporations and other Local Authorities not subject to the Municipal Corporations Act.

(Amends and extends 45 & 46 Vict. c. 50; Municipal Corporations Act, 1882.
Repeals 17 & 18 Vict. c. 71; Borough Rates Act, 1854.
Applies 17 & 18 Vict. c. 57; Returning Officers Act, 1854.
" 6 & 7 Vict. c. 18; Parliamentary Registration Act, 1843.
" 38 & 39 Vict. c. 55; Public Health Act, 1875.
" 16 & 17 Vict. c. 137, &c.; Charitable Trusts Acts, 1853 to 1869.)

*19. An Act to amend the Medical Act (1858).

(Amends 21 & 22 Vict. c. 90; Medical Act, 1858.)

20. An Act to amend the Law relating to the Registry of Deeds Office, Ireland.

(Amends 2 & 3 Will. 4, c. 87; Registry of Deeds, &c, Ireland.)

21. An Act to continue certain Turnpike Acts, and to repeal certain other Turnpike Acts; and for other purposes connected therewith.

(Continues and repeals certain Turnpike Acts as set forth in Schedules 1 to 7.)

*22. An Act to carry into effect an International Convention concerning the Fisheries in the North Sea, and to amend the laws relating to British Sea Fisheries.

(Amends 31 & 32 Vict. c. 45; Sea Fisheries Act, 1868.
Exempts certain British sea-fishing boats from application of section 176 of 39 & 40 Vict. c. 36; Customs Consolidation Act, 1876.
Continues 6 & 7 Vict. c. 79 (Fisheries Act, 1843), as to French Convention.
Repeals part of 6 & 7 Vict. c. 79; Fisheries Act, 1843.
" " 31 & 32 Vict. c. 45; Sea Fisheries Act, 1868.
" section 15 of 40 & 41 Vict. c. 42; Fisheries Act, 1877.

Repeals provisionally part of 31 & 32 Vict. c. 45; Sea Fisheries Act, 1868.
" " section 3 of 38 Vict. c. 15; Sea Fisheries Act, 1875.
Applies Merchant Shipping Acts as regards lights and "wreck."
" 39 & 40 Vict. c. 36; Customs Consolidation Act, 1876, &c.
" in England, Summary Jurisdiction Acts, 42 & 43 Vict. c. 49, &c.
" in Scotland, 27 & 28 Vict. c. 53, and 44 & 45 Vict. c. 33; Summary Jurisdiction Acts, 1864 and 1881.
" in Ireland, 14 & 15 Vict. c. 93; Petty Sessions (Ireland) Act, 1851, &c.)

23. An Act to apply the sum of £15,182,707 out of the Consolidated Fund to the service of the year ending on the 31st March, 1884.

24. An Act to make temporary provision for the Relief of the Destitute Poor in Ireland.

(Applies 32 & 33 Vict. c. 42; 44 & 45 Vict. c. 71; Irish Church Acts, 1869 and 1881.)

25. An Act to explain and amend the thirty-second section of the General Prisons (Ireland) Act, 1877.

(Explains and amends section 32 of 40 & 41 Vict. c. 49; (General Prisons (Ireland) Act, 1877) as to the term "prison service.")

26. An Act to promote the Sea Fisheries of Ireland.

(Constitutes Fishery Piers and Harbours Commission, and creates Sea Fisheries Fund.
Applies 32 & 33 Vict. c. 42; 44 & 45 Vict. c. 71; Irish Church Acts, 1869 and 1881.
" Fishery Piers and Harbours Acts.
Exempts grants under this Act from enactments contained in section 2 of 29 & 30 Vict. c. 45, Fishery Piers and Harbours Act, 1866, and in sub-section 4 of section 4 of 9 & 10 Vict. c. 3, Fishery Piers and Harbours Act, 1846.)

27. An Act further to amend the Acts relating to the raising of Money by the Metropolitan Board of Works; and for other purposes.

(Amends 45 & 46 Vict. c. 33, Metropolitan Board of Works (Money) Act, 1882.
" 32 & 33 Vict. c. 102, Metropolitan Board of Works (Loans) Act, 1869.
Applies 18 & 19 Vict. c. 120; Metropolitan Management Act, 1855.
" Main Drainage Acts.
" 24 & 25 Vict. c. 98; as to forgery of Metropolitan Bills.
Empowers Board to expend moneys for purposes described in First Schedule.)

*28. An Act to amend the Companies Acts, 1862 and 1867.

(Amends 25 & 26 Vict. c. 89; 30 & 31 Vict. c. 131; Companies Acts, 1862 and 1867.)

*29. An Act to consolidate the Accounting Department of the Supreme Court of Judicature, and for other purposes.

(Amends, and applies, 35 & 36 Vict. c. 44; Chancery Funds Act, 1872.)

*30. An Act to authorise Companies registered under the Companies Act, 1862, to keep Local Registers of their Members in British Colonies.

(Applies Companies Acts, 1862 to 1880.)

*31. An Act to prohibit the Payment of Wages to Workmen in Public-houses and certain other places.

(Extends prohibition as to payment of wages in public-houses, &c., contained in 35 & 36 Vict. c. 76; Coal Mines Regulation Act, 1872, and 35 & 36 Vict. c. 77; Metalliferous Mines Regulation Act, 1872.
Applies in England, Summary Jurisdiction Acts.
" in Scotland, 27 & 28 Vict. c. 53, and 44 & 45 Vict. c. 33; Summary Jurisdiction (Scotland) Acts, 1864 and 1881.)

*32. An Act to make further provision respecting the application of the Revenues of Greenwich Hospital, and for other purposes.

(Enacts that grants under Order in Council of 1875 shall be deemed to have been authorised by 28 & 29 Vict. c. 89; Greenwich Hospital Act, 1865.)

33. An Act to amend the Irish Reproductive Loan Fund Act, 1874.

(Amends 37 & 38 Vict. c. 86; Irish Reproductive Loan Fund Act, 1874.)

*34. An Act to amend the Law relating to Railway Passenger Duty, and to amend and consolidate the Law relating to the conveyance of the Queen's Forces by Railway.

(Amends section 4 and 7 of 5 & 6 Vict. c. 79; Duties on Stage Carriages, &c.
Repeals section 20 of 5 & 6 Vict. c. 55†; Regulation of Railways and Conveyance of Troops.
,, in part 7 & 8 Vict. c. 85; Construction of Railways.
,, section 18 of 16 & 17 Vict. c. 69†; Service in the Navy.
,, sections 1 & 2 of 21 & 22 Vict. c. 75†; Cheap Trains.
,, section 14 of 26 & 27 Vict. c. 33†; Inland Revenue.
Applies 44 & 45 Vict. c. 58; Army Act, 1881.)

*35. An Act to make better provision as regards the Metropolis for the isolation and treatment of persons suffering from Cholera and other Infectious Diseases; and for other purposes.

(Provides for isolation and treatment of Cholera and other patients.
Applies 18 & 19 Vict. c. 116; Diseases Prevention Act, 1855.
,, 30 & 31 Vict. c. 6; Metropolitan Poor Act, 1867.
,, 18 & 19 Vict. c. 120; Metropolis Management Act, 1855.
,, Lands Clauses Acts.
Provides for application of 18 & 19 Vict. c. 116; Diseases Prevention Act, 1855, to hamlet of Mottingham (Kent).)

*36. An Act to provide for the application and management of the Parochial Charities of the City of London.

(Appoints Charity Commissioners to be Commissioners under this Act, to exercise powers of 16 & 17 Vict. c. 137; Charitable Trusts Act, 1853, &c.
Extends section 11 of 16 & 17 Vict. c. 137; } Charitable Trusts Acts, 1853 and
,, sections 6 to 9 of 18 & 19 Vict. c. 124 } 1855.
Construes Act with, and applies, Charitable Trusts Acts, 1853 to 1859.)

37. An Act to amend the Public Health Act, 1875, and to make provision with respect to the support of public sewers and sewage works in mining districts.

(Amends 38 & 39 Vict. c. 55; Public Health Act, 1875.
Applies 10 & 11 Vict. c. 17; Waterworks Clauses Act, 1847.)

38. An Act to amend the Law respecting the Trial and Custody of Insane Persons charged with offences.

(Repeals section 1 of 39 & 40 Geo. 3, c. 94; Criminal Lunatics.
,, section 16 of 1 & 2 Geo. 4, c. 33: Lunatics (Ireland).
,, section 3 of 3 & 4 Vict. c. 54; Criminal Lunatics.
Applies 3 & 4 Vict. c. 54; Criminal Lunatics.)

39. An Act for further promoting the Revision of the Statute Law by repealing certain Enactments which have ceased to be in force or have become unnecessary.

(Repeals (with Savings) the enactments described in the Schedule.)

40. An Act to continue various expiring Laws.

(Continues (as specified in Schedule) the following Acts, and enactments amending the same, viz.:—
5 & 6 Will. 4, c. 27; Linen, &c., Manufactures (Ireland).
3 & 4 Vict. c. 89; Poor Rates (Stock in Trade Exemption).
4 & 5 Vict. c. 35; Copyhold, Inclosure, and Tithe Commissioners (now Land Commissioners).
4 & 5 Vict. c. 59; Application of Highway Rates to Turnpike Roads.
10 & 11 Vict. c. 32; Landed Property Improvement (Ireland).
10 & 11 Vict. c. 98; Ecclesiastical Jurisdiction.

† Except so far as relates to Ireland, and except as respects the conveyance of forces by Companies who lose the benefit of this Act (s. 10).

11 & 12 Vict. c. 32; County Cess (Ireland).
14 & 15 Vict. c. 104; Episcopal, &c., Estates.
23 & 24 Vict. c. 19; Dwellings for Labouring Classes (Ireland).
24 & 25 Vict. c. 109; Salmon Fishery (England).
26 & 27 Vict. c. 105; Promissory Notes.
27 & 28 Vict. c. 20; Promissory Notes, &c. (Ireland).
28 & 29 Vict. c. 46; Militia Ballots Suspension.
28 & 29 Vict. c. 83; Locomotives on Roads.
29 & 30 Vict. c. 52; Prosecution Expenses.
32 & 33 Vict. c. 21; Election Commissioners' Expenses.
32 & 33 Vict. c. 56; Endowed Schools (Schemes).
34 & 35 Vict. c. 87; Sunday Observance Prosecutions.
35 & 36 Vict. c 33; Parliamentary and Municipal Elections (Ballot).
36 & 37 Vict. c. 48; Regulation of Railways.
38 & 39 Vict. c. 48; Police Expenses.
38 & 39 Vict. c. 84; Returning Officers' Expenses.
39 & 40 Vict. c. 21; Juries (Ireland).
41 & 42 Vict. c. 41; Returning Officers' Expenses (Scotland).
41 & 42 Vict. c. 72; Sale of Liquors on Sunday (Ireland).
43 Vict. c. 18; Parliamentary Elections.)

41. An Act to amend the Merchant Shipping Acts, 1854 to 1880, with respect to Fishing Vessels and Apprenticeship to the Sea Fishing Service and otherwise.

(Amends 17 & 18 Vict. c. 104, &c.; Merchant Shipping Acts, 1854 to 1880.
Construes Act with, and applies, Merchant Shipping Acts, 1854 to 1882.
Repeals in part 17 & 18 Vict. c. 104; Merchant Shipping Act, 1854.†
" section 13 (1) of 25 & 26 Vict. c. 63; Merchant Shipping Acts Amendment Act, 1862.†
" section 8 of 36 & 37 Vict. c. 85; Merchant Shipping Acts Amendment Act, 1873.†
" in part 43 & 44 Vict. c. 16; Merchant Seamen (Payment of Wages and Rating) Act, 1880.†
" that part remaining unrepealed of 50 Geo. 3, c. 108; British Fisheries.†
Incorporates Part I of 17 & 18 Vict. c. 104; Merchant Shipping Act, 1854.
Applies 38 & 39 Vict. c. 55; Public Health Act, 1875.
" 18 & 19 Vict. c. 120; Metropolis Management Act, 1855.
" 30 & 31 Vict. c. 101; Public Health (Scotland) Act, 1867.
" 41 & 42 Vict. c. 52; Public Health (Ireland) Act, 1878.)

42. An Act to grant Money for the purpose of Loans by the Public Works Loan Commissioners and the Commissioners of Public Works in Ireland and the Irish Land Commission; and to amend the Acts relating to the said Commissioners, and for other purposes.

(Grants £3,000,000 for Public Works, and £1,200,000 for Public Works in Ireland.
Grants £400,000 to Irish Land Commission under 44 & 45 Vict. c. 49; Land Law (Ireland) Act, 1881, and under 46 & 47 Vict. c. 43; Tramways and Public Companies (Ireland) Act, 1883.
Borrowing Powers for purposes of 46 & 47 Vict. c. 43; Tramways and Public Companies (Ireland) Act, 1883: Extends section 6 of 45 & 46 Vict. c. 62; Public Works Loans Act, 1882.
Amends 45 & 46 Vict. c. 47; Arrears of Rent (Ireland) Act, 1882.
" and applies, 40 & 41 Vict. c. 27; Public Works Loans (Ireland) Act, 1877.
Applies 38 & 39 Vict. c. 89; Public Works Loans Act, 1875.
Makes provision as to certain Loans respecting Arbroath Harbour; Athlunkard Bridge, Limerick; Green Street Court House, Dublin; and certain Lands and Mills on River Corrib, Galway.)

43. An Act for promoting the extension of Tramway communication in Ireland, and for assisting Emigration, and for extending certain provisions of the Land Law (Ireland) Act, 1881, to the case of Public Companies.

† Except so far as relates to Scotland.

(Amends 45 & 46 Vict. c. 47; Arrears of Rent (Ireland) Act, 1882.
,, 44 & 45 Vict. c. 49; Land Law (Ireland) Act, 1881.
,, Tramways (Ireland) Acts, 23 & 24 Vict. c. 152, &c.
Applies 33 & 34 Vict. c. 46; Landlord and Tenant (Ireland) Act, 1870.
Construes Act with Tramways (Ireland) Acts.)

44. An Act to explain the effect of Section 195 of the Municipal Corporations Act, 1882.

(Explains the effect of Section 195 of 45 & 46 Vict. c. 50; Municipal Corporations Act, 1882.)

*45. An Act for preventing the Sale of Medals resembling Current Coin.

(Provides against sale of Medals resembling Current Coin.)

*46. An Act to suspend for a limited period, on account of Corrupt Practices, the holding of an Election of a Member or Members to serve in Parliament for certain cities and boroughs.

(Suspends elections for Boston, Canterbury, Chester, Gloucester, Macclesfield, Oxford, and Sandwich.)

*47. An Act to extend the power of Nomination in Friendly and Industrial, &c., Societies, and to make further provision for cases of Intestacy in respect of Personal Property of small amount.

(Extends portions of the following Acts; viz.,
38 & 39 Vict. c. 60, section 15 (3), (4); Friendly Societies Act, 1875.
39 & 40 Vict. c. 45, section 11, (5), (6); Industrial, &c., Societies Act, 1876.
39 & 40 Vict. c. 22, section 10; Trade Union Act Amendment Act, 1876.
26 & 27 Vict. c. 87, sections 41 to 43; Trustee Savings Bank Act, 1863.
7 & 8 Vict. c. 83, section 10; Savings Banks Acts, 1844.
45 & 46 Vict. c. 51, section 6, (e); Government Annuities Act, 1882.)

48. An Act to enable Sanitary Authorities in Ireland to take possession of land for the Erection of Temporary Cholera Hospitals.

(Provides for the erection of temporary Cholera Hospitals.)

49. An Act for promoting the Revision of the Statute Law by repealing various Enactments relating to Civil Procedure or matters connected therewith, and for amending in some respects the Law relating to Civil Procedure.

Repeals (with Savings) the enactments described in the Schedule.
,, enactments in Part II of Schedule to 42 & 43 Vict. c. 59; Civil Procedure Acts Repeal Act, 1879.
Extends 36 & 37 Vict. c. 66; } Supreme Court of Judicature Acts, 1873 and
Applies 38 & 39 Vict. c. 77; } 1875.

50. An Act to apply a sum out of the Consolidated Fund to the service of the year ending on the 31st March, 1884, and to appropriate the Supplies granted in this Session of Parliament.

*51. An Act for the better prevention of Corrupt and Illegal Practices at Parliamentary Elections.

(Repeals s. 36 of 60 Geo. 3, & 1 Geo. 4, c. 11; Elections (Ireland).
,, 1 & 2 Geo. 4, c. 58 (except s. 3); Elections (Ireland).
,, s. 82 of Geo. 4, c. 55; Elections (Ireland).
,, in part 17 & 18 Vict. c. 102; Corrupt Practices Prevention Act, 1854.
,, 21 & 22 Vict. c. 87; Corrupt Practices Prevention Act, 1854, continuance.
,, 26 & 27 Vict. c. 29 (except s. 6); Corrupt Practices at Elections of Members of Parliament.
,, in part 30 & 31 Vict. c. 102; Representation of the People Act, 1867.
,, s. 25 of 31 & 32 Vict. c. 48; Representation of the People Scotland) Act, 1868.
,, s. 12 of 31 & 32 Vict. c. 49; Representations of the People (Ireland) Act, 1868.

Repeals part of s. 18 of 31 & 32 Vict. c. 58; Parliamentary Electors Registration Act, 1868.
" in part 31 & 32 Vict. c. 125; Parliamentary Elections Act, 1868.
" in part 35 & 36 Vict. c. 33; Ballot Act, 1872.
" in part 42 & 43 Vict. c. 75; Parliamentary Elections and Corrupt Practices Act, 1879.
" 43 Vict. c. 18 (except ss. 1 and 3); Parliamentary Elections and Corrupt Practices Act, 1880.
Amends and extends 15 & 16 Vict. c. 57; Election Commissioners Act, 1852.
Applies 31 & 32 Vict. c. 125; Parliamentary Elections Act, 1868.
" 35 & 36 Vict. c. 33; Ballot Act, 1872.
" 38 & 39 Vict. c. 84; Parliamentary Elections (Returning Officers) Act, 1875.
" 30 & 31 Vict. c. 102; Representation of the People Act, 1867.
" 17 & 18 Vict. c. 102; } Corrupt Practices Prevention Acts, 1854 and
" 26 & 27 Vict. c. 29; } 1863.
" 42 & 43 Vict. c. 22; Prosecution of Offences Act, 1879.
" 32 & 33 Vict. c. 21; } Election Commissioners' Expenses Acts, 1869 and
" 34 & 35 Vict. c. 61; } 1871.
" 6 Vict. c. 18; Parliamentary Registration Act, 1843.
Summary Jurisdiction Acts.
Continues Act until 31st December, 1884.)

*52. An Act to amend and consolidate the Law of Bankruptcy.

(Certain express provisions relate to Scotland and Ireland.)
(Amends and consolidates the Law of Bankruptcy.
Repeals as to England the following enactments:—
13 Edw. 1, c. 18, in part.
32 & 33 Vict. c. 62; in part, Debtors Act, 1869.
32 & 33 Vict. c. 71; Bankruptcy Act, 1869.
32 & 33 Vict. c. 83; in part, Bankruptcy Repeal and Insolvent Court Act, 1869.
33 & 34 Vict. c. 76; Absconding Debtors Act, 1870.
34 & 35 Vict. c. 50; in part, Bankruptcy Disqualification Act, 1871.
38 & 39 Vict. c. 77; in part Supreme Court of Judicature Act, 1875.
Extends 24 Geo. 3, c. 26; House of Commons (Election).
Applies 32 & 33 Vict. c. 62; Debtors Act, 1869.
" 3 & 4 Will. 4, c. 74; Fines and Recoveries.
" 38 & 39 Vict. c. 77; Supreme Court of Judicature Act, 1875.
" 13 & 14 Vict. c. 60; Trustee Act, 1850.
" 32 & 33 Vict. c. 71; Bankruptcy Act, 1869.
Consolidates London Bankruptcy Court with Supreme Court of Judicature.
Construes Act with 36 & 37 Vict. c. 66; Supreme Court of Judicature Act, 1873.)

*53. An Act to amend the Law relating to certain Factories and Workshops.

(Amends, explains, and applies 41 & 42 Vict. c. 16; Factory, &c., Act, 1878.)

*54. An Act to make further provision respecting the National Debt, and the Investment of Moneys in the hands of the National Debt Commissioners on account of Savings Banks, and otherwise.

(Amends 38 & 39 Vict. c. 45; Sinking Fund Act, 1875.
Extends 26 & 27 Vict. c. 14; Savings Banks Act, 1863.)

55. An Act to amend the Law relating to the Customs and Inland Revenue, and to make other provisions respecting charges payable out of the Public Revenue, and for other purposes.

(Repeals in part, and amends, 39 & 40 Vict. c. 36; Customs Consolidation Act, 1876.
Amends 33 & 34 Vict. c. 97; Stamp Act, 1870.
" 36 & 37 Vict. c. 57; Consolidated Fund (Permanent Charges Redemption) Act 1873.
Extends, &c., 43 & 44 Vict. c. 19; Taxes Management Act, 1880.
" 45 & 46 Vict. c. 61; Bills of Exchange Act, 1882.
" 24 & 25 Vict. c. 98; Indictable Offences by Forgery.
Applies Charitable Trusts Acts, 1853 to 1869.

Applies 46 & 47 Vict. c. 1; Consolidated Fund (Permanent Charges Redemption) Act, 1883.
Construes Act with 39 & 40 Vict. c. 36; Customs Consolidation Act, 1876.)

56. An Act to amend the Laws relating to Education in Scotland, and for other purposes connected therewith.

(Amends 35 & 36 Vict. c. 62; 41 & 42 Vict. c. 78; Education (Scotland) Acts, 1872 and 1878.)

57. An Act to amend and consolidate the Law relating to Patents for Inventions, Registration of Designs, and of Trade Marks.

(Amends and consolidates the Law relating to Patents, &c.
Repeals (as in Third Schedule) the following enactments:—
21 Jas. 1, c. 3; in part, Statute of Monopolies.
5 & 6 Will. 4, c. 62, s. 11; Statutory Declarations Act, 1835.
5 & 6 Will. 4, c. 83; Letters Patent for Inventions.
2 & 3 Vict. c. 67; Letters Patent for Inventions.
5 & 6 Vict. c. 100; Copyright of Designs.
6 & 7 Vict. c. 65; Copyright of Designs.
7 & 8 Vict. c. 69; in part,† Judicial Committee: Patents.
13 & 14 Vict. c. 104; Copyright of Designs.
15 & 16 Vict. c. 83; Patent Law Amendment Act, 1852.
16 & 17 Vict. c. 5; Letters Patent for Inventions.
16 & 17 Vict. c. 115; Patent Law Amendment Act, 1852, Amendment.
21 & 22 Vict. c. 70; Copyright of Designs.
22 Vict. c. 13; Patents for Inventions.
24 & 25 Vict. c. 73; Copyright of Designs.
28 & 29 Vict. c. 3; Industrial Exhibitions Act, 1865.
33 & 34 Vict. c. 27; Protection of Inventions Act, 1870.
33 & 34 Vict. c. 97; in part, Stamp Act, 1870.
38 & 39 Vict. c. 91; Trade Marks Registration Act, 1875.
38 & 39 Vict. c. 93; Copyright of Designs Act, 1875.
39 & 40 Vict. c. 33; Trade Marks Registration Amendment Act, 1876.
40 & 41 Vict. c. 37; Trade Marks Registration Extension Act, 1877.
43 & 44 Vict. c. 10, s. 5; Great Seal Act, 1880.
45 & 46 Vict. c. 72, s. 16; Revenue, Friendly Societies, and National Debt Act, 1882.
Applies Cutlers' Company's Acts as to Sheffield marks.)

58. An Act to amend the Post Office (Money Orders) Acts, 1848 and 1880, and extend the same to Her Majesty's Dominions out of the United Kingdom.

(Amends 11 & 12 Vict. c. 88; and extends 43 & 44 Vict. c. 33; Post Office (Money Orders) Acts, 1848 and 1880.)

59. An Act to make better provision for the Prevention of Outbreaks of formidable Epidemic, Endemic, or Infectious Diseases, and to amend the Public Health Act (England), 1875, and the Public Health Act (Ireland), 1878.

(Amends 38 & 39 Vict. c. 55; Public Health Act (England), 1875.
,, 41 & 42 Vict. c. 52; Public Health Act (Ireland), 1878.)

60. An Act to better the condition of Labourers in Ireland.

(Construes Act with, and incorporates part of, 41 & 42 Vict. c. 52; Public Health (Ireland) Act, 1878.
Incorporates Lands Clauses Acts.
Extends 38 & 39 Vict. c. 36; Artizans, &c., Dwellings Act, 1875.
Applies 45 & 46 Vict. c. 60; Labourers' Cottages, &c. (Ireland) Act, 1882.
,, 23 & 24 Vict. c. 154; Landlord and Tenant, &c., Act (Ireland), 1860.)

*61. An Act for amending the Law relating to Agricultural Holdings in England.

(Repeals section 1 of 2 Will. & Mar. c. 5; Distress.

† Sections 6 and 7 of this Act are repealed by the Statute Law Revision (No. 2) Act, 1874.

Repeals 38 & 39 Vict. c. 92; } Agricultural Holdings (England) Acts, 1875 and
,, 39 & 40 Vict. c. 74; } 1876.
Applies 29 & 30 Vict. c. 62; Crown Lands Act, 1866.
,, 57 Geo. 3, c. 97; Duchy of Lancaster.
,, 26 & 27 Vict. c. 49; Duchy of Cornwall Management Act, 1863.)

62. An Act for amending the Law relating to Agricultural Holdings in Scotland.

(Repeals sections 2 and 3 of 43 Vict. c. 12; Hypothec Abolition (Scotland) Act, 1880.
Applies 16 & 17 Vict. c. 80; Sheriff Courts (Scotland) Act, 1853.
,, 29 & 30 Vict. c. 62; Crown Lands Act, 1866.)

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PRIVATE BILL LEGISLATION OF 1883.

The total number of private Bills passed during the Parliamentary Session which ended on the 25th August was 180, and an analysis of them shows that 80 out of the entire number are connected with railway undertakings. Three-fourths of these Railway Bills were promoted by existing companies, and 44 of them authorised the different companies to construct 539 miles of additional railways and other works in connection, at an aggregate outlay of 22,532,100*l*. Under the powers obtained by the London and North Western Company in two Acts that company is authorised to expend 2,433,000*l*. in alterations and widening of their lines at different points, and in the construction of new railways 15 miles in length. Among others of the leading companies empowered to expend large sums are the Great Eastern Company, whose Act authorises them to expend 2,250,000*l*. in the construction of 50 miles of new railways in Essex and on other works; the Great Western Company's Act 1,000,000*l*. in widening their lines and other alterations; the London and South Western Company 2,013,000*l*. in making 30 miles of new railways and works in connection; the Midland Railway 1,800,000*l*. on 30 miles of new railway; the Great Northern 600,000*l*. on 9 miles; the Manchester, Sheffield, and Lincolnshire 1,530,000*l*. on 19 miles; and the London, Tilbury, and Southend Company 400,000*l*. on 24 miles of new railways. The Lancashire and Yorkshire Company are also empowered, under their Act, to expend 2,600,000*l*. in the construction of works of a varied character at different points on their system. In addition to the above, fifteen Bills promoted by newly incorporated railway companies have been sanctioned, these several companies being empowered to expend 8,150,000*l*. in the construction of 252 miles of entirely new railways, the aggregate authorised expenditure by existing and new companies being 30,682,100*l*. for the construction of a total of 782 miles of additional railways and works in connection. Among the new companies in the metropolis and the locality immediately around which have received these powers is the London, Harrow, and Hendon Company, which is authorised to construct 12 miles of railway at an outlay of 373,300*l*. The lines proposed to be constructed are from the authorised Beaconsfield, Uxbridge, and Harrow Railway at Harrow to Hendon, and the Great Northern (Edgware and Highgate branch) Railway, north of Highgate, and to the Alexandra Branch Railway; also branch lines to the Midland Railway at Hendon, to the Harrow and Ricksmansworth at Harrow, and to the Metropolitan Outer Circle at Kingsbury. The total number of Tramway Bills sanctioned is fifteen, for the construction of 38 miles of tramway, at an outlay of 623,000*l*., of which 347,000*l*. is for the construction of 14 miles of tramways within the metropolitan area—namely, 8 miles in the Norwood and Croydon district, at a cost of 150,000*l*.; 3 miles in Brentford and Isleworth, at an outlay of 150,000*l*.; and 3 miles in Peckham and East Dulwich, at a cost of 47,000*l*. With respect to eight of the Bills the use of steam or other mechanical power was sanctioned. In addition there were thirty Board of Trade applications for tramway provisional orders for the construction of 137 miles of tramways, at an outlay of 2,836,550*l*. Orders were granted in twenty-six cases, in sixteen of which mechanical power was sanctioned and in nine the underground cable system. The total number of Bills sanctioned with respect to gas and water supply was twenty, in addition to which there were sixteen applications made to the Board of Trade for provisional orders, which were granted and confirmed in all the cases. Town improvements, and rivers, docks, and harbours bills complete the list. Of the former sixteen Bills were sanctioned and seventeen of the latter.

ABSTRACTS OF IMPORTANT ACTS

PASSED IN THE FOURTH SESSION OF THE TWENTY-SECOND PARLIAMENT OF GREAT BRITAIN AND IRELAND.

1. CHURCH, EDUCATION, AND PROFESSIONS.

CITY OF LONDON PAROCHIAL CHARITIES.

[46 & 47 Victoriæ, cap. 36.—20th August, 1883.]

An Act to provide for the better application and management of the Parochial Charities of the City of London.

Section 1 gives the short title as "The City of London Parochial Charities Act, 1883." Section 2 gives the Charity Commissioners for England and Wales authority under this Act to exercise, without application, any of the powers vested in them by the Charitable Trusts Act, 1853. Section 3 provides for the appointment by the Queen of additional paid Charity Commissioners, not exceeding two, and the Treasury may allow the employment by them of persons necessary to enable them to carry out the provisions of this Act. Section 4 names the end of the year 1887 as the period when the Commissioners' powers under this Act will cease, but they may be renewed by the Queen up to, but not beyond, the end of 1889. Part II of the Act (sections 5–10) authorises the Commissioners to enquire into charity property and into vested interests and claims, all the results being reported, and matters affecting corporations or persons to be reported to them. Part III (sections 11–23) provides for the better application of charity funds, the objects to which they may be applied being specified in section 14*c*: the promotion of the technical instruction or education of the poorer inhabitants of the metropolis, by exhibitions, secondary or art education, or evening lectures; by the establishment and maintenance of libraries, museums, art collections, open spaces, and recreation or drill grounds, working men's and women's institutes, convalescent hospitals, and generally for the improvement of the physical, social, and moral condition of the poorer inhabitants of the metropolis. The remaining sections of Part III, and those of Parts IV and V, relate to the procedure under the Act; Part VI provides for a new governing body under the Act, to be called "the Trustees of the London Parochial Charities," and gives a list of the City parishes to which the Act is to apply.

GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION.

[46 & 47 Victoriæ, cap. 19.—16th July, 1883.]

An Act to amend "The Medical Act, 1858."

This short statute empowers the Royal University of Ireland to elect a member of the General Council of Medical Education and

Registration of the United Kingdom in the place of the member nominated by the Queen's University of Ireland until its dissolution.

2. ARMY AND NAVY.

GRANT TO LORD ALCESTER.

[46 & 47 Victoriæ, cap. 16.—29th June, 1883.]

An Act to Grant a sum of Money to Admiral Baron Alcester, G.C.B., in consideration of his Eminent Services.

The preamble recites that the Queen has graciously signified her approbation of the important services rendered by Baron Alcester, Admiral in Her Majesty's Navy, in the course of the recent expedition in Egypt. Section 1 enacts that a sum of 25,000*l.* shall be paid to Baron Alcester out of the Consolidated Fund or the growing produce thereof. By section 2 the short title is given as "Lord Alcester's Grant Act, 1883."

GRANT TO LORD WOLSELEY.

[46 & 47 Victoriæ, cap. 17.—29th June, 1883.]

An Act to grant a sum of Money to General Baron Wolseley of Cairo, G.C.B., G.C.M.G., in consideration of his Eminent Services.

The preamble recites that the Queen has graciously signified her appreciation of the important services rendered by Baron Wolseley in the course of the expedition to Egypt. Section 1 grants to Lord Wolseley a sum of 30,000*l.* out of the Consolidated Fund or the growing produce thereof. By section 2 the short title of the statute is "Lord Wolseley's Grant Act, 1883."

APPLICATION OF GREENWICH HOSPITAL FUNDS.

[46 & 47 Victoriæ, cap. 32.—20th August, 1883.]

An Act to make further provision respecting the application of the Revenues of Greenwich Hospital, and for other purposes.

Section 1 gives the short title as "The Greenwich Hospital Act, 1883," and provides for its construction with the previous Acts affecting the subject. Section 2 gives the Admiralty power to grant from Greenwich Hospital Fund pensions to widows and allowances to children of men killed or drowned in the service of the Crown if (*a*) Non-commissioned officers and petty officers and men of the Royal Navy or Marines; (*b*) Royal Naval Volunteers; (*c*) Seamen's Pension Reserve; and (*d*) Royal Naval Artillery Volunteers; and of men in class (*a*) if killed or drowned on lifeboat service. Gratuities to parents or other relatives of these persons may also be granted out of the Hospital Funds, provided the total expenditure in any one year does not exceed 500*l.*, and the Admiralty may extend the benefit to the relatives of the above-named men who die from the effects of

any injury or disease caused by extraordinary exposure or exertion in the service of the Crown. No person is to be eligible for grants under this section on account of the decease of one of the men above described which took place before 4th June, 1880. Section 3 empowers the Admiralty to provide out of the Hospital Fund for the education and maintenance of sons of warrant officers, non-commissioned officers, petty officers, and men of the Royal Navy and Marines, men of the Royal Naval Volunteers, and Royal Naval Artillery, deceased or incapacitated in the service of the Crown. Section 4 gives the Admiralty power to make regulations for carrying out the Act. Section 5 authorises the payment in the first instance of moneys granted under this Act from sums voted by Parliament which are to be repaid to the Consolidated Fund out of the Greenwich Hospital Income account. Section 6 declares that gratuities or allowances made before this Act passed, under Order in Council of 4th February, 1875, are to be deemed to have been authorised under the Greenwich Hospital Act, 1865. Section 7 makes the decisions of the Admiralty, on all matters affecting the benefits given under this Act, binding and conclusive. Section 8 refers to the vesting of property mortgaged to the Admiralty.

3. TRADE AND COMMERCE.

REGISTRATION OF MEMBERS OF COMPANIES LIVING IN BRITISH COLONIES.

[46 & 47 Victoriæ, cap. 30.—20th August, 1883.]

An Act to authorise Companies registered under the Companies Act, 1862, to keep Local Registers of their Members in British Colonies.

The preamble recites that many companies registered under "The Companies Act, 1862," carry on business in British Colonies where dealings in their shares are frequent, and that delay, inconvenience, and expense are caused by the absence of any legal provision for keeping local registers of the members. By section 1, the short title is to be "The Companies (Colonial Registers) Act, 1883," and it is to be construed, as far as is consistent with its tenor, as one with the Companies Acts, 1862 to 1880, and is, with them, to be referred to as "The Companies Acts, 1862 to 1883." Section 2 defines the term "company" used in the Act as referring to a company registered under the Act of 1862, and having a capital divided into shares; the term "shares" includes stock; and the term "colony" excludes any place within the United Kingdom, the Isle of Man, or the Channel Islands, and includes such territories as are for the time being vested in Her Majesty by virtue of an Act of Parliament for the government of India, and any plantation, territory, or settlement situate elsewhere within Her Majesty's dominions. Section 3, gives power to any company, whose objects comprise the transaction of business in a colony, and under its original or special resolutions, to cause a branch register of members resident in such colony to be kept there, due

notice of the situation of the office of the branch register or of its discontinuance being given to the Registrar of Joint Stock Companies. Section 3 provides that the colonial register thus kept shall be deemed to be part of the company's register of members and *primâ facie* evidence of all particulars entered in it. The register is to be kept in accordance with the provisions of the Companies Acts, 1862 to 1880, except that the advertisement mentioned in section 33 of the Companies Act, 1862, is to be inserted in some newspaper in the district where the register is kept, and that any competent court in the colony is to be entitled to exercise the same jurisdiction for rectifying the same as is by section 35 of the Companies Act, 1862, vested in respect to a register in Her Majesty's superior courts of law or equity in England and Ireland. Offences under section 32 of the Companies Act, 1862, may as regards a colonial register be prosecuted summarily in any tribunal having summary jurisdiction in the colony where the register is kept. By section 4 a copy of every entry in the colonial register is to be transmitted to its registered office as soon as possible after it is made, and a duplicate or duplicates of the colonial register or registers is to be duly entered up, such duplicates being deemed part of the register of members of the company. By section 5 the shares registered in a colonial register are to be distinguished from the shares registered in the principal register, and while the colonial register is continued transactions respecting the shares entered in it are not to be registered in any other register. Section 6 gives power to the company to discontinue to keep a colonial register, and on so doing all entries in that register are to be transferred to some other colonial register kept by the company in the same colony, or to the register of members kept at the registered office of the company. Section 7 exempts from British stamp duty an instrument of transfer of a share registered in a colonial register unless executed in the United Kingdom; but on the death of a member registered in a colonial register under this Act, the share or other interest of the deceased member is, for the purposes of this Act, so far as relates to British duties, to be deemed to be part of his estate and effects situated in the United Kingdom for or in respect of which probate or letters of administration is or are to be granted, or by which an inventory is to be exhibited and recorded in like manner as if he were registered in the register of members kept at the registered office of the company. By section 8, subject to the provisions of this Act, any company may, by its regulations as originally framed, or as altered by special resolution, make such provisions as it thinks fit for the keeping of colonial registers.

PAYMENTS TO SERVANTS OF WOUND-UP COMPANIES.

[46 and 47 Victoriæ, cap. 28.—20th August, 1883.]

An Act to amend "The Companies Acts, 1861 and 1867."

Section 1 gives the short title as "The Companies Act, 1883;" section 2 provides for its construction as one with the Companies Acts, 1862 and 1867; and section 3 fixes 1st September, 1883, as the date on which it should come into force. By section 4, when any

company is being wound up under the Acts of 1862 and 1867, and its assets are being distributed, priority to other debts is to be given to all wages or salary of any clerk or servant in respect of service rendered to the company during four months preceding the commencement of the winding-up not exceeding 50*l.*; and to all wages of any labourer or workman in respect of services rendered to the company during two months before the commencement of the winding-up. Under section 5, all such debts are to rank equally among themselves, and are to be paid in full if the assets of the company are sufficient to meet them, and if not they are to be abated in equal portions between themselves. By section 6, the liquidator is to discharge such debts when the assets come into his hands subject to the retention of such sums as may be necessary for the cost of administration or otherwise.

CHEAP RAILWAY FARES.

[46 & 47 Victoriæ, cap. 34.—20th August, 1883.]

An Act to amend the Law relating to Railway Passenger Duty, and to amend and consolidate the Law relating to the Conveyance of the Queen's Forces by Railway.

Section 1 gives the short title as "The Cheap Trains Act, 1883." Section 2 exempts from passenger duty fares not exceeding 1*d.* a mile, except that fares for return or periodical tickets are to be exempt only where the ordinary fare for the single journey does not exceed that rate. Exceeding the rate of 1*d.* per mile duty is to be payable at 2 per cent. between stations within one urban district, and where the Board of Trade is satisfied that any two or more railway stations are within an area which has a continuous urban as distinguished from a rural or suburban character, and contains a population of not less than 100,000 inhabitants, it may certify those stations as within one urban district for the purposes of this Act. The Board may from time to time rescind or vary any certificate given by them under this section. Second 3 enables the Board of Trade to secure proper third class accommodation and sufficient workmen's trains by empowering it to refer cases of insufficient supply to the Railway Commissioners, and if after an order is made, a company neglects to provide sufficient accommodation or workmen's trains, the ordinary rate of duty is to be charged up to the period when the order is complied with. Section 4 contains provisions as to mileage and exceptional charges. Section 5 provides that 1*d.* is to be the minimum fare for any persons over three years of age, but over that sum fractions of half-a-mile or less may be charged at ½*d.* Section 6 provides for the conveyance of the Queen's forces at reduced rates. By section 9 the Act was brought into operation on 1st October, 1883.

NON-PAYMENT OF WAGES IN PUBLIC HOUSES.

[46 & 47 Victoriæ, cap. 31.—20th August, 1883.]

An Act to prohibit the Payment of Wages to Workmen in Public Houses and certain other places.

The preamble recites that the payment of wages in public houses to persons employed in or about coal mines and metalliferous mines is prohibited by the Acts 35 & 36 Vict. c. 76 and 77, and that it is desirable to extend the prohibition to wages paid to all workmen in England and Scotland. Section 1 gives the short title as "The Payment of Wages in Public Houses Prohibition Act, 1883," and section 2 defines the terms "workman" used in the Act to mean any labourer, servant in husbandry, journeyman artificer, handicraftsman, or person otherwise employed in manual labour, but not a domestic or menial servant, nor a miner to whom the Acts already quoted apply. By section 2 from and after the passing of the Act no wages are to be paid to any workman at or within any public house, beer shop, or place for the sale of any spirits, wine, cider, or other spirituous or fermented liquor, or any office, garden, or place belonging to or occupied with such public house or place, wages to a workman *bonâ fide* employed by the resident owner or occupier alone being excepted. Persons contravening or failing to comply with this enactment or permitting anyone to break it are to be guilty of an offence against the Act, and in the event of the Act being contravened on behalf of any employer, he is himself to be held to be guilty of an offence against the Act, unless he proves that he had taken all reasonable means in his power to prevent such contravention. Section 4 prescribes a penalty not exceeding 10*l.* for each offence against the Act, to be recovered under the Summary Jurisdiction Acts, and section 5 exempts Ireland from the operation of the statute.

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4. LOCAL GOVERNMENT.

POOR LAW CONFERENCES.

[46 & 47 Victoriæ, cap. 11.—18th June, 1883.]

An Act to provide for Expenses incurred by Guardians of the Poor in relation to Poor Law Conferences.

The object of this statute, as stated in the preamble, is to resolve certain doubts which have arisen as to the power of guardians of the poor to charge the rates with the payment of expenses incurred in attending conferences for the discussion of matters connected with the duties which devolve on them, and in purchasing reports of such conferences. By section 1 the short title is "The Poor Law Conferences Act, 1883." By section 2 the guardians of any union may, when empowered by and subject to any regulations of the Local Government Board, pay the reasonable expenses of any guardian or guardians, or clerk to the guardians, incurred in attending the conferences referred to in the preamble, or in purchasing reports of

the proceedings, and may charge the amount to their common fund, or, if they have no common fund, to the fund under their control.

PREVENTION OF DISEASES IN THE METROPOLIS.

[46 & 47 Victoriæ, cap. 35.—20th August, 1883.]

An Act to make better provision as regards the Metropolis for the Isolation and Treatment of Persons suffering from Cholera and Infectious Diseases, and for other purposes.

Section 1 gives the short title as "The Diseases Prevention (Metropolis) Act, 1883." Section 2 names the Managers of the Metropolitan Asylum District as the local authority under the Act. Section 3 gives the managers power to contract for the reception of cholera patients. Section 4 enacts that expenses of managers and local authorities under the Act are to be defrayed under section 31 of "The Metropolitan Poor Act, 1867." Section 5 gives vestries and district boards power to borrow under "The Metropolis Management Act, 1855," for the erection of hospitals under this Act. Section 6 enables the managers to provide special wharves or landing places (not exceeding three in the Metropolis) for embarking patients. Section 7 enacts that the admission, under this Act, of a person suffering from infectious disease into hospitals is not to be regarded as poor relief, so as to put the patient under any disability. The remaining sections contain miscellaneous provisions, and the limit of the Act's operation is fixed at 1st September, 1884.

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5. LAW AND JUSTICE.

SUPREME COURT OF JUDICATURE FUNDS.

[46 & 47 Victoriæ, cap. 29.—20th August, 1883.]

An Act to consolidate the Accounting Departments of the Supreme Court of Judicature, and for other purposes.

The preamble recites that it is expedient that there should be but one accounting department for the Supreme Court of Judicature, and all the courts and divisions thereof, and that it is further expedient to amend certain provisions of the Chancery Funds Act, 1872, and to provide for facilitating the business of the said department. Section 1 enacts that from and after the commencement of the Act there shall be one accounting department for the Supreme Court. Section 2 provides that all securities and money at the time of the commencement of this Act vested in the Paymaster-General in pursuance of the Chancery Funds Act, 1872, and all securities and money at any time after the commencement of this Act transferred or paid into or deposited in court, to the credit of any cause, matter, or account, in the Chancery Division of the High Court of Justice, shall be vested

in Her Majesty's Paymaster-General for and on behalf of the Supreme Court of Judicature, and shall be subject to all the provisions of the Chancery Funds Act, 1872, and to the rules made and now in force under that Act, subject to such alterations therein and to such other and further rules as shall from time to time be made as thereby provided. Section 3 contains provisions for funds in other divisions of the High Court to be transferred to the Paymaster-General for the Supreme Court by the direction of the Lord Chancellor with the concurrence of the Treasury, and the Paymaster-General to hold such funds in trust and to attend to the orders of the court regarding them, the Consolidated Fund being liable to make good to the suitors of the court the moneys and securities so transferred, paid, or placed to the account or credit of the Paymaster-General. Section 4 gives power to the Lord Chancellor, with Treasury concurrence, to make the necessary rules, and requires the Treasury to cause the Paymaster-General to keep the necessary accounts, all of which are to be audited by the Comptroller and Auditor-General as prescribed in section 20 of the Chancery Funds Act, 1872. Section 5 makes the acts of the Paymaster-General done under this Act as valid and effectual as if they had been done in pursuance of an order of the High Court of Justice or of the Court of Appeal. Under section 6, if the posting of remittances by the Paymaster-General to persons entitled to them, is sanctioned by rules made by the Lord Chancellor or by the Treasury, the posting of a letter containing such cheque or document, and addressed to any such person entitled thereto at the address given by him in his request, is, as respects the liability of the Paymaster-General, and of the Consolidated Fund respectively, to be equivalent to the delivery of such cheque or document to the entitled person. Section 7 amends 35 & 36 Vict. c. 44, section 10, to the extent that rules made by the Lord Chancellor with Treasury concurrence under the Chancery Funds Act, 1872, or this Act, may determine what evidence of an order of the High Court of Justice or Court of Appeal, and of the directions contained in such order, is to be necessary or sufficient to authorise the Bank of England or any other person to transfer on sale or otherwise, or to deliver out, any securities or other things standing in the books of or deposited with such bank or person to the credit or account of the said Paymaster-General for the time being under this or the aforesaid Act. Section 8 gives the short title of the statute as "The Supreme Court of Judicature (Funds, &c.) Act, 1883."

CORRUPT PRACTICES AT ELECTIONS.

[46 & 47 Victoriæ, cap. 51.—25th August, 1883.]

An Act for the better prevention of Corrupt and Illegal Practices at Parliamentary Elections.

Sections 1–6 define what are corrupt practices and they include: the provision directly or indirectly of refreshment as a means of influencing voters,—the persons treating and the persons accepting

being held equally guilty—the use of, or threat to use force; bribery, personation, and aiding or abetting such offences. Section 4 provides that a candidate found personally guilty on the trial of an election petition of corrupt practices shall never again be capable of being elected to or sitting in the House of Commons, or if elected his election is to be void. A candidate guilty of corrupt practices through his agent is by section 5 disqualified for seven years from being elected or sitting for the county or borough in which the offence was committed. Section 6 prescribes the penalties to be imposed on persons convicted on indictment of corrupt practices. Section 7 makes any payment or contract to pay for conveyance of electors by rail, horse, or carriage, any payment to an elector for the use of premises for the exhibition of bills, addresses, or notices, or for committee rooms, in excess of the number allowed in the first schedule of the Act, a corrupt practice, contracts with advertising agents in their ordinary business being alone excepted. Section 8 makes the incurring of election expenses beyond the maximum allowed under the Act an illegal practice. Section 9 makes voting by prohibited persons and publishing of false statements of the withdrawal of a candidate an illegal practice. Section 10 provides that a person found guilty of an illegal practice shall on summary conviction be liable to a fine not exceeding 100*l.*, and shall be incapable for five years from date of conviction of being registered as an elector or voting at a Parliamentary election, or for an election to a public office within the meaning of this Act, held in the county or borough where the illegal practice has been committed. Section 11 refers to the reports of the election courts respecting illegal practices and the punishment of candidates found guilty. Section 12 extends the provisions of 15 & 16 Vict. c. 57, as to the duties of election commissioners, so that it applies to the corrupt practices as mentioned in this Act. Sections 13 to 21 refer to payments for illegal practices which are to be treated as illegal payments, and makes payments for the use of committee rooms in houses for sale of intoxicating liquors or in elementary schools illegal payments. Sections 22 and 23 provide for exemption of candidates from punishment and penalty in cases of proved innocency. Sections 24 to 35 deal fully with the whole matter of election expenses. Sections 36 to 39 relate to the disqualifications of electors consequent upon their conviction of illegal practices. Sections 40 to 44 refer to the trial of election petitions. Sections 45 to 49 contain miscellaneous provisions. Sections 50 to 57 deal with legal proceedings under the Act and the jurisdiction of the various courts. Sections 59 to 66 supply a series of supplemental provisions, definitions, saving clauses, and notes on Acts repealed. Section 67 names 15th October, 1883, as the date on which the operation of the Act commences. Section 68 applies the Act to Ireland, and section 69 applies it to Scotland. Section 70 provides that the Act shall continue in force until the 31st December, 1884, and no longer, unless continued by Parliament; and such of the Corrupt Practices Prevention Acts as are referred to in Part I of the third schedule to this Act shall continue in force until the same day, and no longer, unless continued by Parliament.

BANKRUPTCY ACT.

[46 & 47 Victoriæ, cap. 52.—25th August, 1883.]

An Act to Amend and Consolidate the Law of Bankruptcy.

This important statute contains eight parts, divided into 170 sections, and there are five schedules. Its short title, by section 1, is "The Bankruptcy Act, 1883;" its operation, except as expressly provided, is in section 2 limited to England and Wales; and its effect is, by section 3, to commence from and immediately after the 31st of December, 1883. Part I (sections 4 to 31) relates to "Proceedings from Act of Bankruptcy to Discharge." Section 4 describes the acts which constitute an "act of bankruptcy." Sections 5 to 14 refer to the issue of receiving orders for the protection of the estate of the person who has made an act of bankruptcy, all his property being, by section 9, placed under the protection of the official receiver, so that no creditor to whom the debtor is indebted in respect of any debt provable in bankruptcy shall have any remedy against his property or person in respect of the debt, or shall commence any action or other legal proceedings unless with the leave of the Court and on such terms as the Court may impose, secured creditors not being affected by the section. Sections 15 and 16 describe the proceedings consequent on the order, including the first and other meetings of creditors and the submission of the debtor's statement of affairs. Section 17 prescribes rules for the public examination of the debtor upon oath, the official receiver taking part in the examination and being permitted, if specially authorised by the Board of Trade, to employ a solicitor with or without counsel. Section 18 regulates the composition or scheme of arrangement which creditors may agree to, but which is not to be binding on them unless confirmed by a majority representing three-fourths in value of the proved debts and approved by the Court. The debtor may state causes of dissent from the scheme, and the official receiver is to report to the Court, after which the Court may approve and enforce it, disobedience to an order of Court in such a case being deemed contempt. Sections 20 to 24 relate to the adjudication of bankruptcy where composition is not accepted or approved, and in that case, by section 20, the property of the bankrupt is to become divisible among the creditors, and vest in a trustee, who may, by section 21, be appointed by the creditors and approved by the Board of Trade, the person chosen giving proper security. If a trustee is not appointed within four weeks of the adjudication, or, if negotiations are then still pending, within seven days of their close the official receiver is to report to the Board of Trade, and the Board is to appoint, subject to the substitution of a trustee elected by the creditors, if they subsequently elect one. Section 22 defines the duties of the committee of inspection, who may be appointed by the creditors to superintend the trustee's administration of the bankrupt's property, the Board of Trade being empowered to do the necessary acts if no committee is appointed. Section 23 enables a composition or scheme to be accepted after adjudication of bankruptcy. Sections 24 to 26 deal with the control over the person and property of the debtor, who is required to attend meetings of creditors and give required information, to give

an inventory of his property, and aid in its realisation and distribution, his arrest if necessary being provided for in section 25, and steps for the recovery of his property by section 27. Under section 28 the Court may, after hearing a report of the bankrupt's conduct and affairs from the official receiver, give or withhold an order for his discharge, or suspend it, or make it conditional, but no discharge is to be granted where he has been guilty of a misdemeanour under this Act. The effect of the order of discharge is stated in section 30, and section 31 makes it a misdemeanour for a bankrupt who has not obtained one to get credit to the extent of 20*l.* or upwards without informing the person giving it that he is an undischarged bankrupt.

Part II describes the *Disqualification of the Bankrupt*, and by section 32 he may not sit or vote in Parliament or on its committees; be appointed or act as a justice of the peace, mayor, alderman, councillor, guardian, overseer, member of school board or parochial boards; if a member of Parliament when adjudged bankrupt, unless the disqualifications arising from the bankruptcy are removed within six months from the date of the order, the Court is to certify the fact to the Speaker, and the seat becomes vacant; he is also to vacate the other offices named above on adjudication of his bankruptcy. Section 35 provides for the annulment of adjudication in certain cases.

Part III deals with the *Administration of Bankrupt's Property*—the nature of debts provable in bankruptcy (section 37); the mode of dealing with mutual credits between the bankrupt and creditors (section 38); priority of certain debts: (*a*) parish or local rates, (*b*) wages or salaries of clerks or servants, and of wages of labourer and workman for time or piece-work not exceeding 50*l.*, for services rendered during four months before date of receiving order, all of which are to rank equally and be paid in full if the property admits, and if not in equal portions (section 40); preferential claims in case of apprenticeship (section 41); power to landlord to distrain for rent (section 42) limited to one year's rent if distress be levied after commencement of bankruptcy, but the landlord may prove under the bankruptcy for the surplus due; property available for payment of debts (sections 43, 44); effect of bankruptcy on antecedent transactions (sections 45–49); realisation of bankrupt's property by the trustee (section 50); its seizure by order of Court (section 51): the sequestration of an ecclesiastical benefice (section 52); appropriation to creditors of portion of pay of bankrupt if an officer of army, navy, or civil service (section 53); vesting of property in official receiver until a trustee is appointed (section 54); power to trustee to decline to take over onerous property of bankrupt such as land burdened with covenants or other unsaleable property (section 55); powers of trustee to deal with property (section 56); power to trustee, with permission of committee of inspection, to carry on bankrupt's business if needful for its beneficial winding-up, to bring or defend legal actions, &c. (section 57); trustee's duty in regard to distribution of property (section 58); and provisions for cases of partnership (section 59); creditors at a distance (section 60); rights of creditors who did not prove debt before declaration of dividend (section 61); final dividends (section 62); power to allow bankrupt to manage property (section 64); right of bankrupt to surplus after payment in full of his creditors, cost of proceedings, &c. (section 65).

Part IV refers to the *Duties of the Official Receiver and of the Staff of the Board of Trade.*

Part V relates to *Trustees in Bankruptcy.* By section 72 when the creditors appoint a trustee of a debtor's estate his remuneration is to be fixed by their resolution, and is to be in the nature of a commission or percentage, of which one part shall be payable on the amount realised, after deducting any sums paid to secured creditors out of the proceeds of their securities, and the other part on the amount distributed in dividend; if one-fourth in number or value of the creditors dissent from the resolution, or the bankrupt satisfies the Board of Trade that the remuneration is unnecessarily large, the Board is to fix the amount. The resolution is to express what expenses the remuneration is to cover, and no liability is to attach to the bankrupt's estate, or to the creditors, in respect of any expenses which the remuneration is expressed to cover. Where no remuneration has been voted to a trustee he is to be allowed out of the bankrupt's estate such proper costs and expenses incurred by him in or about the proceedings of the bankruptcy as the taxing officer may allow. A trustee is not under any circumstances whatever, to make any arrangement for or accept from the bankrupt, or any solicitor, auctioneer, or any other person employed about a bankruptcy, any gift, remuneration, or pecuniary or other consideration or benefit whatever beyond the remuneration fixed by the creditors and payable out of the estate, nor is he to make any arrangements for giving up, or give up, any part of his remuneration, either as receiver, manager, or trustee to the bankrupt, or any solicitor or other person employed about a bankruptcy. Section 73 makes provision as to costs. Where a trustee or manager receives remuneration for his services as such no payment is to be allowed in his accounts in respect of the performance by any other person of the ordinary duties which are required by statute or rules to be performed by himself. Where the trustee is a solicitor he may contract that the remuneration for his services as trustee shall include all professional services. All bills and charges of solicitors, managers, accountants, auctioneers, brokers, and other persons, not being trustees, are to be taxed by the prescribed officer, and no payments in respect of them are to be allowed in the trustee's accounts without proof of such taxation having been made. The taxing master is to satisfy himself before passing such bills and charges that the employment of such solicitors and other persons, in respect of the particular matters out of which such charges arise, has been duly sanctioned. Every such person is, on request by the trustee (which request the trustee shall make a sufficient time before declaring a dividend), to deliver his bill of costs or charges to the proper officer for taxation, and if he fails to do so within seven days after receipt of the request, or such further time as the Court, on application, may grant, the trustee is to declare and distribute the dividend without regard to any claim by him, and thereupon any such claim is to be forfeited as well against the trustee personally as against the estate. Section 74 requires an account called the Bankruptcy Estates Account to be kept by the Board of Trade with the Bank of England, and all moneys received by the Board of Trade in respect of proceedings under this Act are to be paid to that account. Provision is also made in this section for the trustee to have an

account at a local bank where the Board of Trade, at the application of the committee of inspecion, give him authority. If a trustee at any time retains for more than ten days a sum exceeding 50*l*., or such other amount as the Board of Trade sanctions, he is, unless he explains its retention to the satisfaction of the Board, to pay interest at the rate of 20*l*. per cent. per annum, and is to have no claim for remuneration, and may also be removed from his office by the Board of Trade, and be liable to pay any expenses caused by his default. Section 75 prohibits any trustee in a bankruptcy or composition or scheme of arrangement from paying any sums received by him as trustee into his private account. Section 76 gives power to the Treasury to invest surplus funds standing to the credit of the Bankruptcy Estates' account, and to sell out such invested sums when required to answer demands on the bankrupt's estate. By section 77 the Treasury may from time to time meet the charges made in respect of policies and expenses under the Act out of the receipts arising from fees, fee stamps, and dividends on investments under this Act. Section 78 provides rules for the audit of the trustee's accounts which are to be sent to the Board of Trade at such times as may be prescribed, and not less than twice in such year during his tenure of office, the account being forwarded in duplicate and verified by a statutory declaration. The Board of Trade is to cause the accounts to be audited, all needful vouchers and information and access to books being provided by the trustee. When audited, one copy of this account is to be filed and kept by the Board and the other is to remain with the Court, each copy being open to the inspection of any creditor of the bankrupt or of any interested person. Section 79 requires the trustee to furnish by post to any creditor a list of creditors, with the amount of debt due to each, the creditor asking for it paying the prescribed fee for it. Under section 80 the trustee is to keep proper books of the proceedings in bankruptcy, which are to be open to the inspection of any creditor of the bankrupt, personally or by his agent, subject to the control of the Court. Under section 81 an annual statement of proceedings is to be transmitted by each trustee to the Board of Trade, and the Board is to cause it to be examined, and is to call the trustee to account for any misfeasance, neglect, or omission, and compel him to make good any loss from his neglect sustained by the estate of the bankrupt. Section 82 provides for the release of trustees from office when they have realised all the property of the bankrupt, or so much as can, in their opinion, be realised without needlessly protracting the trusteeship, when a final dividend has been distributed, and when the accounts have been rendered and reported on by the Board of Trade. The order of Court releasing the trustee is to be held to discharge him from all liability for any acts or defaults in the administration of the bankruptcy. Sections 83 to 91 contain further provisions as to the power of creditors to appoint more than one trustee or successive trustees (section 84); the vacation of the trustee's office if he becomes insolvent; the removal of a trustee from office by resolution of creditors at special meeting or by the Board of Trade, when the Board are of opinion that he has been guilty of misconduct or neglect of duty, leave being given to him or the creditors to appeal to the High Court if they disapprove of his removal (section 86); as to

proceedings in case of vacancy in the office of the trustee (section 87), and as to his voting powers (section 88).

Part VI relates to the *Constitution, Procedure, and Powers of Court.* By section 92 the Courts having bankruptcy jurisdiction are the High Court and the County Courts, but the Lord Chancellor may from time to time, by order under his hand, exclude any County Court from having jurisdiction in bankruptcy, and for the purposes of bankruptcy jurisdiction may attach its district or any part of it to the High Court, or to any other County Court or Courts, and may from time to time revoke or vary any order so made. The Lord Chancellor may in like manner and subject to the like conditions, detach the district of any County Court or any part thereof from the district and jurisdiction of the High Court. A County Court which, at the commencement of this Act, is excluded from having bankruptcy jurisdiction, is to continue to be so excluded until the Lord Chancellor otherwise orders. Periodical sittings for the transaction of bankruptcy business by County Courts having jurisdiction in bankruptcy are to be holden at such times and at such intervals as the Lord Chancellor shall prescribe for each such Court. By section 93, from and after the commencement of this Act the London Bankruptcy Court is to be united and consolidated with and form part of the Supreme Court of Judicature, and the jurisdiction of the London Bankruptcy Court is transferred to the High Court. For the purposes of this union, consolidation, and transfer, and of all matters incidental thereto and consequential thereon, the Supreme Court of Judicature Act, 1873, as amended by subsequent Acts, is, subject to the provisions of this Act, to have effect as if the union, consolidation, and transfer had been effected by that Act, except that all expressions referring to the time appointed for the commencement of that Act are to be construed as referring to the commencement of this Act, and subject to this proviso, this Act and the above-mentioned Acts are to be read and construed together. Section 94 provides for the transaction of bankruptcy business by such Division of the High Court of Justice as the Lord Chancellor may from time to time direct, and the officers, clerks, and subordinate persons who are, at the commencement of this Act, attached to the London Bankruptcy Court, and their successors, are to be officers of the Supreme Court of Judicature, and attached to the High Court. By section 95, if the debtor against or by whom a bankruptcy petition is presented has resided or carried on business within the London Bankruptcy District as defined by this Act for the greater part of the six months immediately preceding the presentation of the petition, or for a longer period during those six months than in the district of any County Court, or is not resident in England, or if the petitioning creditor is unable to ascertain the residence of the debtor, the petition is to be presented to the High Court. In any other case the petition is to be presented to the County Court for the district in which the debtor has resided or carried on business for the longest period during the six months immediately preceding the presentation of the petition. But nothing in this section is to invalidate a proceeding by reason of its being taken in a wrong Court. Section 96 defines the London Bankruptcy District, for the purposes of this Act, as comprising the City of London and the liberties thereof, and all such parts of the metropolis and other

places as are situated within the district of any County Court described as a Metropolitan County Court in the list contained in the third schedule. Section 97 provides for the transfer of proceedings from Court to Court, and if any question of law arises in any bankruptcy proceedings in a County Court which all the parties to the proceeding desire, or which one of them and the judge of the County Court may desire, to have determined in the first instance in the High Court, the judge shall state the facts, in the form of a special case, for the opinion of the High Court. The special case and the proceedings, or such of them as may be required, are to be transmitted to the High Court for the purposes of the determination. Sections 98 to 102 contain further provisions as to the jurisdiction and powers of the Courts. Section 103 contains provisions as to judgment debtors' summons, and makes it lawful for the Lord Chancellor to direct that the jurisdiction and power now vested in the High Court by section 5 of the Debtors' Act, 1869, shall be assigned to the judge to whom bankruptcy jurisdiction is assigned, or that the whole or any part of the said powers and jurisdiction shall be delegated to and exercised by the Bankruptcy Registrars of the High Court. Every County Court within the jurisdiction of which a judgment debtor is or resides is to have jurisdiction under section 5 of the Debtors' Act, 1869, though the amount of the judgment debt may exceed 50*l*. Where, under this section, application is made by a judgment creditor to a Court having bankruptcy jurisdiction for the committal of a judgment debtor the Court may, if it thinks fit, decline to commit, and in lieu thereof, with the consent of the judgment creditor, and on payment by him of the prescribed fee, make a receiving order against the debtor. In such a case the judgment debtor is to be deemed to have committed an act of bankruptcy at the time the order is made. Section 104 provides for appeals at the instance of the person aggrieved from the order of a County Court or of the High Court to Her Majesty's Court of Appeal; from the Court of Appeal, with Her Majesty's permission, but not otherwise, to the House of Lords; all appeals being in conformity with such general rules as may for the time being be in force. Sections 105 to 115 deal with the procedure of the Courts charged with carrying out the provisions of the Act. Section 116 refers to the disabilities of officers of Courts with bankruptcy jurisdiction, none of whom are to be capable of being elected or of sitting as members of the House of Commons, or to act directly or indirectly by self, clerk, or partner, as solicitor in any proceedings in bankruptcy or in any prosecution of a debtor by order of the Court, and if he so acts he is to be liable to dismissal from his office. Section 117 refers to the enforcement of orders of Courts throughout the United Kingdom.

Part VII deals with the case of *Small Bankruptcies.*

Part VIII contains *Supplemental Provisions.*

SALE OF COUNTERFEIT MEDALS.

[46 and 47 Victoriæ, cap. 45.—25th August, 1883.]

An Act for preventing the Sale of Medals resembling Current Coin.

The second section of this short statute makes it a misdemeanour

in England and Ireland and in Scotland a crime and offence punishable, on conviction, with imprisonment for any term not exceeding one year, with or without hard labour to make, or have in possession for sale, or offer for sale, or sell, without due authority or excuse (the proof to lie on the accused) any medal, cast, coin, or other like thing made wholly or partially of metal or any metallic combination and resembling in size, figure, and colour any of the Queen's current gold or silver coin, or having thereon a device resembling any device on any of the Queen's current gold or silver coin, or being so formed that it can by gilding, silvering, colouring, washing, or other like process, be so dealt with as to resemble any of the Queen's current gold or silver coin.

SUSPENSION OF ELECTIONS.

[46 & 47 Victoriæ, cap. 46.—25th August, 1883.]

An Act to suspend for a limited period, on account of Corrupt Practices, the holding of an Election of a Member or Members to serve in Parliament for certain cities and boroughs.

The preamble recites that, in pursuance of addresses to Her Majesty, Commissioners were appointed to inquire into the existence of corrupt practices at the elections of Members in Parliament for the cities and boroughs named in the schedule, and reported that corrupt practices prevailed. It is therefore declared to be expedient temporarily to suspend the elections for these cities and boroughs. And by section 2 no election for them is to take place until the expiration of seven days after the meeting of Parliament in 1884. The following are the cities and boroughs named in the schedules, the years in which the corrupt practices were reported by the Commissioners to have prevailed being given in brackets: Boston [1880]; Canterbury [1879-80]; Chester [1874 and 1880]; Gloucester [1874 and 1880]; Macclesfield [1865, 1868, 1874, 1880]; Oxford [1874 and 1880]; and Sandwich [1880].

PROVIDENT NOMINATIONS AND SMALL INTESTACIES.

[46 & 47 Victoriæ, cap. 47.—25th August, 1883.]

An Act to extend the power of Nomination in Friendly and Industrial, &c., Societies, and to make further provision for cases of Intestacy in respect of Personal Property of small amount.

The preamble recites the desirability of extending the provision already existing under various statutes by which a member of a friendly, industrial, or other like society may, by writing under his hands, delivered at or sent to the registered office of such society, nominate any person to whom any moneys payable by the society on the death of such member, not exceeding 50*l.*, shall be paid at his decease, and may from time to time revoke or vary such nomination by a writing under his hand similarly delivered or sent, and by which on receiving satisfactory proof of the death of a nominator, such society is bound to pay to the nominee the amount due to such

deceased member, not exceeding the sum aforesaid. Section 1 gives the short title as "The Provident Nominations and Small Intestacies Act, 1883," and declares that it shall have force in Great Britain and Ireland, and (except section 10, and so much of it as relates to trades unions), to the Channel Islands, and (except section 10, and so much as relates to industrial and provident societies and to trades unions), to the Isle of Man. Section 3 enacts that the Acts already referred to in the preamble, viz., sub-sections 3 and 4 of section 15 of "The Friendly Societies Act, 1875," sub-sections 5 and 6 of section 11 of "The Industrial and Provident Societies Act, 1876," section 10 of "The Trades Union Act Amendment Act, 1876," sections 41–43 of "The Trustee Savings Bank Act, 1863," section 10 of an Act passed in the 7th & 8th Vict., intituled "An Act to amend the Law relating to Savings Banks, and to the purchase of Government Annuities through the medium of Savings Banks," and sub-head (*e*) of section 6 of "The Government Annuities Act, 1882," respectively shall be read as if in the said sections of the said Act the words 100*l.* were substituted for 50*l.* By section 4 a nomination may be partly printed, and if made in a book kept at the office is to be taken to be delivered at such office. By section 5 a depositor in a savings bank, not being under sixteen years of age, may by writing under his hand delivered at or sent to the office nominate any person, not being an officer or servant of the directors (unless such officer or servant be the husband, wife, father, mother, child, grandchild, brother, sister, nephew, or niece of the nominator), to whom any sum, not exceeding 100*l.*, which may remain due to such depositor at his decease may be paid at such decease, and may from time to time revoke or vary such nomination by writing under his hand similarly delivered or sent; and on receiving satisfactory proof of the death of a nominator, the directors shall pay to the nominee the sum due to the deceased depositor, provided it does not exceed 100*l.* Section 6 extends 38 & 39 Vict. c. 60, s. 15 (3), and 39 & 40 Vict. c. 45, s. 11 (5), (6). Section 7 makes provisions in case of intestacy and no nomination. If any member of a registered trade union, entitled from the funds thereof to a sum not exceeding 100*l.*, dies intestate and without having made any nomination which remains unrevoked at his death, such sum shall be payable, without letters of administration, to the person who appears to a majority of directors, upon such evidence as they may deem satisfactory, to be entitled by law to receive the same. By section 8 if a member of any society who is entitled to make a nomination under this Act or the Acts hereby amended is illegitimate, and has died intestate, and without having made any such nomination subsisting at his death, the directors may pay the sum which such member might have nominated to or among the person or persons who, in the opinion of the majority of the directors, would have been entitled thereto if such member had been legitimate, or, if there are no such persons, then the deposits are to be dealt with as the Commissioners of the Treasury may direct. By section 9 all payments made by directors under the powers aforesaid are to be valid with respect to any demand of any other person as next of kin of a deceased member, or as his lawful representative or person claiming to be such representative, against the society or savings bank, or the directors, but such claimants are to have remedy for recovery of such money, against

the person or persons who shall have received the same. Section 10 contains a provision in cases where the sum to be paid exceeds 80*l.* to prevent fraud on the revenue.

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6. FINANCE.

NATIONAL DEBT.

[46 & 47 Victoriæ, cap. 54.—25th August, 1883.]

An Act to make further provision respecting the National Debt, and the Investment of Moneys in the hands of the National Debt Commissioners on account of Savings Banks, and otherwise.

The preamble recites that by the Sinking Fund Act, 1875, a fixed annual sum of 28,000,000*l.* was charged on the Consolidated Fund as the permanent annual charge for the National Debt; that various annuities payable out of this annual charge will expire in 1885; that the National Debt Commissioners hold large sums of perpetual annuities on account of trustees, savings banks, and post office savings banks, and in pursuance of certain Acts these annuities have been converted into terminable annuities ending in the year 1885; that it is proposed to convert certain other portions of the annuities into terminable annuities; and that it is expedient to confer such power as is hereinafter mentioned to convert into terminable annuities perpetual annuities held by the said Commissioners on account of both trustee and post office savings banks. The preamble then proceeds to recite that in pursuance of the Chancery Funds Act, 1872, perpetual annuities to an amount exceeding 61,000,000*l.* capital stock were on the 31st December, 1882, standing to the account of "the Paymaster-General for the time being on behalf of the Court of Chancery," in trust for the suitors of the High Court of Justice, in accordance with the said Act; that it is expedient to convert a portion of the said perpetual annuities held by the Paymaster-General, not exceeding in the whole 40,000,000*l.* capital stock, into terminable annuities ending within a period not exceeding twenty years, subject to such provisions as hereinafter mentioned for the security of the suitors, and that it is expedient to provide for the adjustment from time to time of the terminable annuities into which under this Act, or under the Savings Bank Investment Act, 1866, any perpetual annuities shall be converted, so as to prevent any loss or gain arising to the said Commissioners or the Paymaster-General from such conversion. The statute commences by providing by section 1 for the carrying out of the proposed conversion of perpetual annuities into terminable annuities, the first terminable annuities thus created being by section 2 limited to 3,600,000*l.*, divided into three sets, of which each shall be for annual sums amounting to 1,200,000*l.* Section 3 enables the Treasury from time to time to convert such amount as it thinks expedient of perpetual annuities standing to the account of the Paymaster-General not exceeding 40,000,000*l.* capital stock into such terminable annuities for periods not twenty years as will terminate within twenty

years from 31st March, 1884, and may be of equivalent value. Section 4 provides against loss or gain to the National Debt Commissioners, and the Paymaster-General from such conversion. By section 5 the Treasury may for the purpose of facilitating the conversion of perpetual annuities into terminable annuities, exchange such of the existing terminable annuities specified in the schedule to this Act (which are held by the National Debt Commissioners on account of trustee savings banks or post office savings banks, and terminate in 1885), not exceeding in the whole the annual sum of 5,135,263*l.*, for such new terminable annuities for periods not exceeding twenty years, as may be of equivalent capital value; and the capital value of the existing annuities is to be deemed to be their present value ascertained on the basis of the rate of interest yielded by 3 per cent. perpetual annuities at the average price of the day as certified by the Bank of England on the day of the exchange, and in calculating the capital value of the new annuities the interest shall be taken at the same rate. Section 6 provides for an extension of term for terminable annuity upon conversion of 3 per cents. held by National Debt Commissioners into 2½ per cents., and section 7 provides for the redemption of part of the terminable annuities created in pursuance of the Indian Loan Act. The remaining sections contain supplemental provisions for carrying the Act into effect.

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7. MISCELLANEOUS.

WHITE LEAD FACTORIES.

[46 & 47 Victoriæ, cap. 53.—25th August, 1883.]

An Act to amend the Law relating to certain Factories and Workshops.

Section 1 gives the short title of the statute as "The Factory and Workshops Act, 1883." By section 2 it is enacted that on and after the 31st December, 1883, it shall be unlawful to carry on a white-lead factory unless it is certified by an inspector to be in conformity with this Act, and by section 3 the conditions on which a certificate is given are those contained in the schedule to the Act, subject to amendment or modification by a Secretary of State. Section 4 requires the chief inspector of factories, within a reasonable time after application, to cause a white-lead factory to be inspected, and on his report to a Secretary of State that it is in conformity with the Act a copy of a certificate, signed by the inspector, is to be given to the occupier. Section 5 provides that on failure to comply with the conditions, the inspector is to give notice to the occupier, specifying the nature of the default, and unless this is remedied within a reasonable time a Secretary of State may withdraw the certificate until the default is remedied. By section 6, a fine of 2*l.* a day is to be imposed on any person keeping a white-lead factory without a certificate. Any person who is bound to observe the rules of the factory and fails to do so is made liable on conviction to a fine not exceeding 2*l.*, and the owner of

the factory to a fine not exceeding 5*l.*, unless he proves that he had taken all reasonable pains to prevent such contravention or non-compliance. Section 8 provides for the framing and approval of the special rules by a Secretary of State. Section 9 enables the Secretary of State, on receiving written proposals for the alteration of the rules from the occupier, to approve the alterations. Section 10 refers to false statements and failure to send in the rules, and makes the defaulter liable on summary conviction to a fine not exceeding 20*l.* By section 11, printed copies of all rules in force in any white-lead factory are to be put in a conspicuous place in the factory affected, and a copy is to be given by the occupier to any persons affected by them, if they apply for it. Failure to comply with this section is to render the occupier liable on summary conviction to a fine of 10*l.* Section 12 imposes a fine of 5*l.* for pulling down, injuring, or defacing any proposed rules. Section 13 explains section 53 of "The Factory and Workshop Act, 1878," and declares that it only authorises overtime employment of young persons or women to take place in any factory or workshop on forty-eight days in the whole in any twelve months; and that in reckoning such period of forty-eight days, every day on which any young person or woman has been employed overtime is to be taken into account; and that section 56 of the said Act only authorises overtime employment of women to take place in any factory or workshop on ninety-six days in the whole in any twelve months, and that in reckoning such period of ninety-six days, every day on which any woman has been employed overtime is to be taken into account. Section 14 amends the law as to period of employment of children in certain cases, and says that, notwithstanding anything in section 12 or section 14 of the Act of 1878, the period of employment for a child in the afternoon set in a factory or workshop, where the dinner-time does not begin before two o'clock in the afternoon, may begin at noon; provided that in such case the period of employment in the morning set shall end at noon. Section 15 deals with bakehouses, and enacts that it shall not be lawful to let or suffer to be occupied as a bakehouse, or to occupy as a bakehouse, any room or place which was not so let or occupied before the 1st of June, 1883, unless the following regulations are complied with:—(i.) No water-closet, earth-closet, privy, or ashpit to be within or communicate directly with the bakehouse; (ii.) Any cistern for supplying water to the bakehouse to be separate and distinct from any cistern for supplying water to a water-closet; (iii.) No drain or pipe for carrying off fæcal or sewage matter is to have an opening within the bakehouse. Any person who lets or suffers to be occupied, or who occupies any room or place as a bakehouse in contravention of this section shall be liable, on summary conviction, to a fine not exceeding 40*s.*, and to a further fine not exceeding 5*s.*, for every day during which any room or place is so occupied after a conviction under this section. By section 16, where a court of summary jurisdiction is satisfied on the prosecution of an inspector or a local authority that any room or place used as a bakehouse (whether the same was or was not so used before the passing of this Act) is in such a state as to be on sanitary grounds unfit for use or occupation as a bakehouse, the occupier is to be liable, on summary conviction, to fine not exceeding 40*s.*, and on a second or any subsequent conviction, not exceeding 5*l.*

The court of summary jurisdiction may, however, in addition to or instead of inflicting such fine, order means to be adopted by the occupier, within the time named in the order, for the purpose of removing the ground of complaint, and may, upon application, enlarge the time so named, but if, after the expiration of the period, the order is not complied with, the occupier is liable to a fine not exceeding 1*l.* for every day that such non-compliance continues. Section 17 declares, as respects every retail bakehouse, the provisions of this part of this Act, and of sections 33, 34, and 35 of "The Factory and Workshop Act, 1878" (which relate to cleanliness, ventilation, overcrowding, and other sanitary conditions) are to be enforced by the local authority of the district in which the retail bakehouse is situate, and not by an inspector under "The Factory and Workshop Act, 1878;" and for the purposes of this section the medical officer of health of the local authority is to have and exercise all such powers of entry, inspection, taking legal proceedings and otherwise, as an inspector under "The Factory and Workshop Act, 1878." If any child, young person, or woman is employed in any retail bakehouse, and the medical officer of the local authority becomes aware thereof, he shall forthwith give written notice thereof to the factory inspector of the district. An inspector under the Act of 1878 is not, as respects any retail bakehouse, to exercise the powers of entry and inspection conferred by that Act, unless he has notice or reasonable cause to believe that a child, young person, or woman is employed therein. Section 18 provides for the construction of the Act, and gives definitions. Sections 19 and 20 apply it to Scotland and Ireland. In the schedule the conditions are set forth for obtaining a certificate, and run as follows:—

(1.) The stacks and stoves in the factory must be efficiently ventilated.

(2.) There must be provided for the use of the persons employed in the factory sufficient means of frequently washing hands and feet, with a sufficient supply of hot and cold water, soap, towels, and brushes.

(3.) There must be provided in addition, for the use of women employed in the factory, sufficient baths, with a sufficient supply of hot and cold water, soap, towels, and brushes.

(4.) There must be provided for the use of the persons employed in the factory (but not in any part of the factory where any work is carried on) a proper room for meals.

(5.) There must be provided for every person working at any tank an overall suit with head covering, and for every person working at any white-bed a respirator or covering for the mouth and nostrils and head covering, and for every person working at any dry stove or rollers an overall suit with head covering, and a respirator or covering for the mouth and nostrils.

(6.) There must be accessible to all persons employed in the factory a sufficient supply of acidulated drink.

SEA FISHERIES.

[46 & 47 Victoriæ, cap. 22.—2nd August, 1883.]

An Act to carry into effect an International Convention concerning the Fisheries in the North Sea, and to amend the Laws relating to British Sea Fisheries.

Section 1 gives the short title as "The Sea Fisheries Act, 1883." Section 2 confirms the International Convention for the purpose of regulating the police of the fisheries in the North Sea outside territorial waters, and gives its articles the same force as if they

formed part of the body of this Act. Section 3 gives power to Her Majesty, by Orders in Council, to make regulations for the execution of the Act and the maintenance of order among sea-fishing boats, and the persons belonging thereto, and to impose fines not exceeding 10*l.* for the breach of such regulations. By section 4 any person, if within the exclusive fishery limits of the British Islands, or if outside those limits, any person belonging to a British sea-fishing boat, is to be liable on summary conviction to a fine not exceeding 5*l.*, or in the discretion of the court, to imprisonment for a term not exceeding three months, with or without hard labour, who (*a*) acts in contravention of articles 13 to 22 (both inclusive) of the first schedule to this Act, or any of them; or, (*b*) causes injury to any person in any one or more of the following ways, namely, by assaulting any one belonging to another sea-fishing boat, or by causing damage to another sea-fishing boat, or to any property on board thereof, or belonging thereto; or, (*c*) fishes for oysters, or having on board his boat any oyster dredge within any seas and during any time within and during which oyster fishing is prohibited by law, or by any convention, treaty, or arrangement to which this Act may be hereafter applied. Section 5 makes a person in the same waters liable on summary conviction to a fine not exceeding 50*l.*, or in the discretion of the court to imprisonment for a term not exceeding three months, with or without hard labour, and the instrument shall be liable to be forfeited, who (*a*) uses any instrument for the purpose of damaging or destroying, by cutting or otherwise, any fishing implement belonging to another sea-fishing boat, except in the cases provided for by articles 20 and 21 of the first schedule to this Act; or, (*b.*) takes on board or has on board such boat any instrument serving only or intended to damage or destroy fishing implements, by cutting or otherwise. Section 7 makes regulations as to foreign fishing within exclusive British fishery limits. Section 8 provides for a registry of British sea-fishing boats. Sections 9 and 10 contain miscellaneous provisions. Section 11 provides for the enforcement of the Act by "Sea Fishery Officers," and it declares that:—(2.) The following persons shall be British sea-fishery officers, that is to say; every officer of or appointed by the Board of Trade, every commissioned officer of any of Her Majesty's ships on full pay, every officer authorised in that behalf by the Admiralty, every British Consular officer, every Collector and principal officer of Customs in any place in the British Islands, and every officer of Customs in the British Islands authorised in that behalf by the Commissioners of Customs, every divisional officer of the Coastguard, and every principal officer of a coastguard station. (3.) The following persons shall be foreign sea-fishery officers; that is to say, the commander of every vessel belonging to the Government of any foreign State bound by the Convention, and any officer appointed by a foreign State for the purpose of enforcing the Convention, or otherwise recognised by Her Majesty as a sea-fishery officer of a foreign State. Section 12 defines the powers of British sea-fishery officers. Section 13 those of foreign sea-fishery officers. Section 15 provides for legal proceedings. The schedule contains the text of the International Treaty, to which the Rulers of the United Kingdom, Germany, Belgium, Denmark, French Republic, and the Netherlands, are parties.

AGRICULTURAL HOLDINGS.

[46 & 47 Victoriæ, cap. 61.—25th August, 1883.]

An Act for amending the Law relating to Agricultural Holdings.

This statute, which consists of sixty-four sections, is divided under three parts:—I. Improvements; II. Distress; III. General Provisions. Section 1 gives the tenant, on quitting his holding at the determination of a tenancy, a right to compensation from his landlord for any improvement made in his holding to the extent of its fair value to an incoming tenant, provided that in estimating the value any improvement justly due to the inherent capabilities of the soil shall be taken into account as part of the improvement. Section 2 provides that no compensation shall be paid for improvements executed before the commencement of this Act, with two exceptions. The first exception is where a tenant has, within ten years before the commencement of this Act, made an improvement mentioned in the third part of the schedule, and is not entitled under any contract or custom, or under the Agricultural Holdings Act (England), 1875, to compensation for it, viz.: boning of land with undissolved bones; chalking of land; clay-burning; claying of land; liming of land; marling of land; application to land of purchased artificial or other purchased manure; consumption on the holding by cattle, sheep, or pigs, of cake or other feeding stuff not produced on the holding. The second exception is where a tenant has, within ten years before the commencement of this Act, made an improvement mentioned in the first and second schedules, and is not entitled to any compensation under contract, custom, or the Act of 1875, and the landlord within one year after the commencement of this Act declares in writing his consent to the making of such improvement, then the tenant on quitting his holding on the determination of his tenancy may claim compensation as if this Act had been in force when the improvement was made. The improvements to which this provision refers are:—Erection or enlargement of buildings; formation of silos; laying down of permanent pasture; making and planting of osier beds; making of water meadows or works of irrigation; making of gardens; making or improving of roads or bridges; making or improving of watercourses, ponds, wells, or reservoirs, or of works for the application of water power or for the supply of water for agricultural or domestic purposes; making of fences; planting of hops; planting of orchards or fruit bushes; reclaiming of waste land; warping of land; embankment and sluices against floods; drainage. Section 3 provides that compensation for improvements executed after the commencement of the Act is not to be payable in respect of the works just named (erection or enlargement of buildings, embankments, and sluices against floods), unless the landlord or his agent duly authorised on that behalf has, previously to their execution, and after the passing of this Act, consented in writing to such improvement. Such consent may be given by the landlord unconditionally or upon such terms as to compensation as he, the tenant, may agree upon, and in the event of such an agreement being made any compensation payable under it is be deemed to be substituted for compensa-

tion under this Act. Section 4 provides that no compensation shall be payable for improvements of drainage executed after the commencement of this Act, unless the tenant has, not more than three months and not less than two months before beginning to execute them, given to the landlord, or his agent duly authorised in that behalf, notice in writing of his intention so to do, and of the manner in which he proposes to do the intended work. Upon such notice being given, the landlord and tenant may agree on the terms as to compensation or otherwise on which the improvement is to be executed, and if any such agreement is made, any compensation payable under it is to be deemed to be substituted for compensation under this Act, or the landlord may, unless the notice of the tenant is previously withdrawn, execute the improvement himself in any reasonable and proper manner which he thinks fit, and charge the tenant with a sum not exceeding 5*l.* per cent. per annum on the outlay incurred in executing the improvement, or not exceeding such annual sum payable for a period of twenty-five years as will pay such outlay in the said period, with interest at the rate of 3 per cent. per annum, such annual sum to be recoverable as rent. In default of any such agreement or undertaking, and also in the event of the landlord failing to comply with his undertaking within a reasonable time, the tenant may execute the improvement himself, and be entitled to compensation for it under this Act. The landlord and tenant may, if they think fit, dispense with any notice under this section, and come to an agreement in a lease or otherwise between themselves in the same manner and of the same validity as if such notice had been given. Section 5 makes a reservation in a case where under a contract of tenancy current at the commencement of this Act, any agreement in writing or custom, or the Agricultural Holdings (England) Act, 1875, provides specific compensation for any improvement comprised in the first schedule ("Erection or Enlargement of Buildings," "Embankment and Sluices against Floods," in list given above). Compensation in respect of such improvement, although executed after the commencement of this Act, is to be payable in pursuance of such agreement, custom, or Act of Parliament, and is to be deemed to be substituted for compensation under this Act. Where under any particular agreement fair and reasonable compensation, having regard to the circumstances existing at the time the agreement is made, is secured to a tenant for an improvement of the class mentioned above ("boning of land" —"consumption of stuff not produced on the holding"), it is to be deemed to be substituted for compensation under this Act. This last provision as to a particular agreement is to apply in the case of a tenant under a contract of tenancy current at the commencement of this Act in respect of such improvement specific compensation for which is not provided by any agreement in writing or custom or in the Agricultural Holdings Act, 1875. Section 6 provides regulations as to the ascertainment of the amount of the compensation under this Act payable to the tenant in respect of any improvement. Account is to be taken in *reduction* thereof: (*a.*) Any benefit which the landlord has given or allowed to the tenant in consideration of the tenant executing the improvement; and (*b.*) In the case of compensation for manures the value

of the manure that would have been produced by the consumption on the holding of any hay, straw, roots, or green crops sold off or removed from the holding within the last two years of the tenancy or other less time for which the tenancy has endured, except as far as a proper return of manure to the holding has been made in respect of such produce so sold off or removed therefrom; and (*c.*) Any sums due to the landlord in respect of rent or of any waste committed or permitted by the tenant, or of any breach of covenant or other agreement connected with the contract of tenancy committed by the tenant, also any taxes, rates, and tithe rentcharge due or becoming due in respect of the holding to which the tenant is liable as between him and the landlord. *In augmentation of the tenant's compensation* any sum due to the tenant for compensation in respect of a breach of covenant or other agreement connected with a contract of tenancy and committed by the landlord is to be taken into account. Nothing in this section is to enable a landlord to obtain under this Act compensation in respect of waste by the tenant or of breach by the tenant committed or permitted in relation to a matter of husbandry more than four years before the determination of the tenancy. Sections 7 to 28 deal with the matter of procedure under the Act. By section 7 notice of an intended claim for compensation is to be given to the landlord in writing at least two months before the determination of the tenancy. Where a tenant gives such notice, the landlord may, before the determination of the tenancy, or within fourteen days after, give a counter-notice in writing to the tenant of his intention to make a claim in respect of any waste or any breach of convenant or other agreement. Every such notice and counter-notice is to state, as far as reasonably may be, the particulars and amount of the intended claim. Section 8 provides that if the landlord and tenant do not agree on the amount and mode and time of payment of compensation to be paid under this Act the difference shall be settled by a reference. Section 9 provides that in case of reference where the parties agree to appoint one referee jointly, it will be sufficient, but if not each is to appoint a referee, notice of such appointment being given on either side to the other. Provision is also made for the case of the death of the referee or referees, and in case of failure of either side to appoint a referee the County Court is to appoint one. Before they enter on the reference the referees are to appoint an umpire, or if they fail to do so the County Court is to appoint one. Every appointment, notice, and request under this section is to be in writing. Section 10 enables either party on appointing a referee to require by notice in writing to the other, that the umpire shall be appointed by the Land Commissioners for England, and in that case he is to be so appointed. In every other case, if either party on appointing a referee requires, by notice in writing to the other, that the umpire shall be appointed by the County Court, then, unless the other party dissents by notice in writing therefrom, the umpire and any successor to him is, on the application of either party, to be so appointed, and in case of such dissent the umpire, and any successor to him, is to be appointed, on the application of either party, by the Land Commissioners for England. Section 11 empowers the judge of the County Court to exercise the powers assigned to that Court.

Sections 12 to 28 contain details as to the procedure in the references, the award of compensation, and the general action of the referees and umpires, the costs in the County Court, &c. Section 29 enables the landlord on paying compensation to obtain charges. The remaining sections of the first part deal with minor questions of procedure and with the application of the Act to Crown and Duchy lands (35–37) and to ecclesiastical and charity lands (38–40). Section 41 provides for the landlord's resumption of possession of property let on a yearly tenancy for certain purposes.

Part II deals with the proceedings of landlords in the matter of distraint for rent of any holding to which this Act applies. Section 45 provides a limitation as to distraint of stock, &c. Section 46 gives a remedy for wrongful distress levied under this Act, and sections 47 to 52 supply further provisions in this connection.

Part III contains general provisions. By section 53 the Act comes into force on 1st January, 1884. By section 54 nothing in this Act is to apply to a holding that is not either wholly agricultural or wholly pastoral, or in part agricultural, and as to the residue pastoral, or in whole or in part cultivated as a market garden, or to any holding let to the tenant during his continuance in any office, appointment, or employment held under the landlord. Section 55 makes void in law and equity any contract, agreement, or covenant made by a tenant, by virtue of which he is deprived of his right to claim compensation under this Act in respect of any improvement mentioned in the first schedule hereto (except an agreement providing such compensation as is by this Act permitted to be substituted for compensation under this Act). By section 56 where an incoming tenant has, with the consent in writing of his landlord, paid to an outgoing tenant any compensation payable under or in pursuance of this Act in respect of the whole or part of any improvement, such incoming tenant is to be entitled on quitting the holding to claim compensation in respect of such improvement or part in like manner, if at all, as the outgoing tenant would have been entitled to claim if he had remained tenant of the holding, and quitted the holding at the time at which the incoming tenant quits the same. Section 57 makes compensation under this Act exclusive. A tenant is not to be entitled to claim compensation by custom or otherwise than in manner authorised by this Act in respect of any improvement for which he is entitled to compensation under or in pursuance of this Act, but where he is not entitled to compensation under or in pursuance of this Act he may recover compensation under any other Act of Parliament, or any agreement or custom, in the same manner as if this Act had not passed. Sections 58 to 60 contain other miscellaneous provisions. Section 61 interprets the terms used in the Act. Section 62 declares that on and after the commencement of this Act, the Agricultural Holdings (England) Act, 1875, and the Agricultural Holdings Act (England), 1875, Amendment Act, 1876, are repealed, with saving clauses as to acts done under those statutes or compensation granted under them. Section 63 gives the short title of the Act as the Agricultural Holdings (England) Act, 1883, and section 64 limits its operation to England and Wales.

ABSTRACTS OF PARLIAMENTARY AND OTHER OFFICIAL DOCUMENTS.

1. FINANCE, TAXATION, AND CURRENCY.

NATIONAL REVENUE AND EXPENDITURE.—The subjoined tables show the gross PUBLIC REVENUE and EXPENDITURE of the United Kingdom in the year ended 31st March, 1883:—

SOURCES OF REVENUE:—	£
Customs	19,657,000
Excise	26,930,000
Stamps (exclusive of fee, &c., stamps)	11,841,000
Land Tax	1,045,000
House Duty	1,755,000
Property and Income Tax	11,900,000
Post Office	7,300,000
Telegraph Service	1,710,000
Crown Lands (Net)	380,000
Interest on Advances for Local Works, &c., and on Purchase Money of Suez Canal Shares	1,218,844
Miscellaneous (including fee, &c., stamps)	5,267,612
Total Income	£89,004,456
Income for year estimated in Budgets	£87,197,000
Excess of Income over Budget Estimate	£1,807,456

BRANCHES OF EXPENDITURE:—	£
Permanent Charge of Debt:—	
Interest (except as below) and Management of the Debt	21,364,883
Terminable Annuities	7,206,247
Interest of Exchequer Bills, &c.	135,076
New Sinking Fund	213,793
Trustee Savings Banks, Deficiency Annuity	83,672
Interest, &c., not forming part of the above Permanent Charge, viz.:—	
Interest of Loans for Local Purposes and Sinking Fund	475,515
Interest and Principal of Exchequer Bonds (Suez)	199,910
Other Charges on Consolidated Fund:—	
Civil List	408,540
Annuities and Pensions	391,743
Salaries and Allowances	95,907
Courts of Justice	502,680
Miscellaneous Services (Ordinary)	143,126
Voted Supply Services:—	
Army Services (including Army Purchase)	15,502,350
" " Charges on account of Troops in India	1,100,000
Navy Services	10,408,903
Grant to India (Afghan War)	500,000
Forces in the Mediterranean, Vote of Credit	2,300,000
Egyptian Expedition, Army (Supplementary)	728,000
Ditto Navy (Supplementary)	350,000
Ditto Contribution to India	500,000
Ditto Civil Charges	17,500
Transvaal, Expenses connected with the	14,000
Miscellaneous Civil Services	17,336,000
Customs and Inland Revenue Departments	2,870,300
Post Office	3,828,500
Telegraph Service	1,510,000
Post Office Packet Service	719,625
Total Ordinary Expenditure	£88,906,278
Estimated on Budgets and Supplementary Votes	£89,582,868
Less than Estimates by	676,590

CUSTOMS AND EXCISE.—The Produce of the two great sources of PUBLIC REVENUE, CUSTOMS and EXCISE, which together contribute considerably more than One-Half to the NATIONAL INCOME of the UNITED KINGDOM, was as follows in the financial year ending March 31, 1883:—

CUSTOMS DUTIES on Articles usually contributing not less than £1,000 Annually.	Gross Receipts. £	s.	d.
Beer, Mum, and Spruce.	2,724	1	1
—— Of other Sorts . .	5,279	4	3
Chicory	67,634	19	0
Cocoa, Cocoa Husks, and Chocolate . .	59,473	5	2
Coffee	207,299	3	3
Currants	337,918	16	2
Figs	20,774	19	3
Plate, Gold and Silver .	5,868	13	4
Plums, Dried or Preserved, French Plums and Prunelloes . .	3,558	0	4
Prunes	8,901	3	5
Raisins	148,216	18	7
Spirits, Colonial and Foreign:—			
Rum	2,262,770	7	9
Brandy	1,533,451	1	11
Geneva	120,524	2	6
Of other sorts . . .	451,005	3	1
Tea	4,231,506	19	3
Tobacco and Snuff . .	8,980,511	12	1
Wine	1,295,716	0	10
All other Articles . . .	1,848	11	4
Charges on deliveries from the Bonded Warehouses . . .	34,537	11	1
Moneys deposited and not appropriated to goods	7,886	0	1
	£19,787,406	13	9
Duties collected at the Isle of Man . . .	49,035	11	6
Total Customs .	£19,836,442	5	3
Drawbacks, Repayments, &c.	153,771	14	0
Net Produce . .	£19,682,670	11	3

EXCISE DUTIES.	Gross Receipts. £	s.	d.
Chicory	1,743	18	3½
Coffee Mixture Labels .	6,334	2	2½
Licences, viz.:			
Auctioneers, Appraisers, &c.	80,652	0	0
Beer and Cider, and Beer and Wine . .	193,025	17	8¼
Brewers	45,182	12	0
Dog	333,308	7	6
Establishment, viz.:			
Armorial Bearings .	78,678	12	0
Carriages	554,876	11	0
Male Servants . .	137,092	10	0
Game	174,061	0	0
Gold and Silver Plate .	46,837	4	0
Gun	77,793	10	0
Hawkers and Pedlars .	26,163	12	0
Medicine Vendors . .	4,851	0	0
Pawnbrokers . . .	34,552	10	0
Refreshment Houses .	6,248	5	9
Spirits:			
Distillers and Rectifiers	4,072	5	0
Dealers	121,654	11	6
Publicans, including Grocers in Scotland and Ireland . . .	1,478,594	14	5
Tobacco	86,682	4	1¾
Wine and Sweets .	72,071	19	3½
Other than the foregoing	9,257	11	0½
Beer	8,569,533	7	5
Railways	810,514	19	0½
Spirits	14,863,063	14	6¼
Total Excise . . .	£27,816,856	18	9¼
Deductions on account of Drawbacks, Discounts, Parliamentary Allowances, Repayments, &c. .	£833,940	15	2½
Net Produce . .	£26,982,916	3	7

STAMPS.—The following table gives the gross receipts from Stamps in the United Kingdom during the year ended the 31st of March, 1883:—

Heads of Duty.	Gross Receipts. £	s.	d.
Probates of Wills and Letters of Administration	3,886,163	18	0
Legacy Duty	2,723,721	9	8
Succession Duty . . .	827,777	2	2
Total Probate and Legacy, &c., Duties	7,437,662	9	10
Deeds and other Instruments, not included under the following heads . . .	2,053,631	9	8½
Bills of Exchange . .	765,062	12	10
Bankers' Notes	472	16	0
Composition for the Duties on the Bills and Notes of the Banks of England and Ireland, and of Country Bankers .	130,918	9	10
Cards	15,211	14	0
Gold and Silver Plate .	79,024	7	6
Licences and Certificates	153,166	10	0
Marine Insurances . .	154,476	2	6
Medicine	154,773	17	1½
Receipts, Drafts and other 1*d.* Stamps .	923,725	12	5

Heads of Duty.	Gross Receipts. £	s.	d.
Total Stamps . .	£11,868,159	1	9
Drawbacks, Discounts, and Allowances .	177,133	18	10
Net Produce . .	£11,691,025	2	11
Fee Stamps, viz.:			
Admiralty Court (Ireland) . . .	579	0	6
Bankruptcy Court (England) . . .	66,447	15	7
Bankruptcy Court (Ireland) . . .	3,391	17	0
Chancery Fund (Ireland) . . .	790	13	0
Civil Service Commission	11,221	16	6
Companies Registration	32,336	7	6
Copyhold, Inclosure, and Tithe Commission, now Land Commission (England)	5,835	5	0
County Courts (Ireland)	26,810	19	2
District Audit . . .	28,868	10	0
Judgments Registry Fund (Ireland) .	3,457	16	0
Judicature (England) .	340,564	14	0
,, (Ireland) .	37,201	8	3
Land Court (Ireland) .	1,857	10	3
Land Registry (England).	1,016	1	0
Law Courts (Scotland)	5,350	0	0
London Gazette . .	27,295	0	0
Newspaper Registration	543	14	0
Patent Hearings and Disclaimers . .	453	10	0
Police Courts (Metropolis) . . .	8,606	2	6
Public Record . . .	652	13	0
Railway Commission .	289	6	0
Record of Title (Ireland)	31	12	0
RegisterHouse (Scotland).	36,971	18	7
Registration of Deeds (Ireland) .	11,142	12	9
Warrants for Letters Patent under the Great Seal . . .	1,046	0	0
Total Fee Stamps . .	£652,762	2	7
Patents for Inventions	207,794	0	0
Total Fee and Patent Stamps	860,556	2	7
Drawbacks, Discounts, Allowances, &c. .	4,024	2	6
Net Receipt . .	£856,532	0	1

NATIONAL REVENUE FROM 1871 TO 1883.—The following table shows the total gross Revenue in each of the financial years ended March 31, from 1871 to 1883, inclusive, and the proportion of receipts per head of population of the United Kingdom:—

Year ended March 31.	Revenue. £	Proportion per head of Population. £	s.	d.
1871	69,945,220	2	4	5
1872	74,708,314	2	7	3
1873	76,608,770	2	8	2
1874	77,335,657	2	8	2
1875	74,921,873	2	6	3
1876	77,131,693	2	7	1
1877	78,565,036	2	7	6
1878	79,763,298	2	7	8
1879	83,115,972	2	9	2
1880	81,265,055	2	7	7
1881	84,041,288	2	8	7
1882	85,822,282	2	9	0
1883	89,004,456	2	10	4

NATIONAL EXPENDITURE FROM 1871 to 1883.—The following table shows the total amount of National Expenditure for each of the financial years ended March 31, from 1871 to 1883, inclusive, and the proportion of receipts per head of population of the United Kingdom:—

Year ended March 31.	Expenditure. £	Proportion per Head of Population. £	s.	d.
1871	69,548,539	2	4	3
1872	71,490,020	2	5	0
1873	70 714,448	2	4	5
1874	76,466,510	2	7	7
1875	74,328,040	2	5	10
1876	76,621,773	2	6	10
1877	78,125,227	2	7	2
1878	82,403,495	2	9	3
1879	85,407,789	2	10	6
1880	84,105,754	2	9	3
1881	83,107,924	2	8	3
1882	85,472,556	2	8	10
1883	88,906,278	2	10	3

NATIONAL DEBT.—The following table shows the total amount of the Funded Debt of the United Kingdom on the 31st of March, 1882, the Debt created and reduced in the year ended 31st March, 1883, and the balance at the latter date:—

	£	s.	d.
Total Funded Debt on 31st March, 1882 .	709,498,547	0	0
Debt created in the year ended 31st March, 1883 . . .	4,392,418	0	0
Total	713,890,965	0	0

	£	s.	d.
Debt reduced in year ended 31st March, 1883	1,191,972	0	0
Balance, being total Funded Debt on 31st March, 1883	712,698,993	0	0

The following table shows the state of the Public Funded Debt of the United Kingdom on 31st March, 1883:—

Capital Funded Debt:— Great Britain.	Capitals. £	s.	d.
New Annuities, at 2½ per cent.	9,398,339	1	6
Exchequer Bonds, created per 16 Vict., c. 23, at 2½ per cent.	418,300	0	0
Total, at 2½ per cent .	£9,816,639	1	6
Debt due to the Bank of England, at 3 per cent.	11,015,100	0	0
Consolidated Annuities, at 3 per cent.	391,078,414	15	10
Reduced Annuities, at 3 per cent. . . .	91,551,579	9	8
New Annuities, at 3 per cent.	177,227,353	0	0
Total, at 3 per cent. .	£670,872,447	5	6
New Annuities, at 3½ per cent.	225,746	6	4
Total, Great Britain	£680,914,832	13	4
Ireland.	£	s.	d.
New Annuities, at 2½ per cent.	181,780	0	0
Debt due to the Bank of Ireland, at 3 per cent.	2,630,769	4	8
Consolidated Annuities, at 3 per cent. .	4,632,059	6	8
Reduced Annuities, at 3 per cent. . . .	126,151	8	2
New Annuities, at 3 per cent.	24,213,401	11	3
Total, at 3 per cent. .	£31,602,381	10	9
Total, Ireland . . .	£31,784,161	10	9
Total Capital of the Funded Debt of the United Kingdom, on 31st March, 1883 .	712,698,994	4	1

CHARGES ON NATIONAL DEBT.—The following table shows the annual charges on the Funded Debt of the United Kingdom, in the year ended the 31st of March, 1883:—

	Annual Charge. £	s.	d.
Funded Debt	21,258,055	3	0
Terminable Annuities:			
Annuities per 43 Vict., c. 15, expiring 20th March, 1885, "National Debt Act, 1880" . . .	1,350,583	0	0
Annuities, per 18 Vict., c. 18, expiring 5 April, 1885 . . .	116,000	0	0
Annuities, per 23 & 24 Vict., c. 109, and subsequent Acts, expiring 5 April, 1885 (Fortifications) . .	589,722	0	0
Annuity, per 26 Vict., c. 14, expiring 5 April, 1885 . . .	9,983	7	3
Annuities, per 32 & 33 Vict., c. 59, and 29 Vict., c. 5, expiring at various dates in 1885 (payable yearly)	3,617,845	0	0
Annuities, per 35 & 36 Vict., c. 68, expiring at various dates in 1885 (payable yearly), "The Military Forces Localization Act". . .	378,831	0	0
Sinking Fund Annuity on New 2½ per Cents., per 33 & 34 Vict., c. 71, s. 69 .	6,906	14	7
Annuity, per 44 & 45 Vict., c. 54, expiring 5th July, 1906, "Indian Loan Act, 1881"	115,864	10	0
Annuity, per 43 & 44 Vict , c. 36, expiring 15th May, 1908, "Savings Banks Act, 1880"	83,672	12	0
Sinking Fund, per 44 and 45 Vict., c. 55, expiring at various dates, "National Debt Act, 1881" .	42,105	17	6
Red Sea and India Telegraph Company's Annuity, 25 & 26 Vict., c. 39, expiring 4th August, 1908 .	36,000	0	0
Annuities for Terms of Years, per 10 Geo. 4, c. 24, and 3 Will. 4, c. 14, expiring at various periods	25,850	9	0
Life Annuities, per 10 Geo. 4, c. 24, 3 Will. 4, c. 14, 16 & 17 Vict. c. 45, and 27 & 28 Vict. c. 43 . . .	971,916	8	0

	Annual Charge. £	s.	d.
Exchequer Tontine Annuities, per 29 Geo. 3, c. 41	7,000	0	0
Management:			
Great Britain . . .	213,983	1	3
Ireland	13,228	15	9
Total amount of charge on debt existing on 31st March, 1882.	28,837,547	18	4
Charges on Debt created in the year ended 31st March, 1883:—			
Funded Debt:—			
Capital created, per Act 44 & 45 Vict., c. 55, "National Debt Act, 1881" .	109,810	9	5
Terminable Annuities:—			
Annuities for Terms of Years, per 10 Geo. 4, c. 24	1,517	8	6
Life Annuities, per 10 Geo. 4, c. 24, 16 & 17 Vict., c. 45, and 27 & 28 Vict., c. 43	68,169	13	0
Sinking Fund, per 44 and 45 Vict, c. 55, expiring at various dates, "National Debt Act, 1881" .	43,924	3	10
Total Charge on Debt created in the year ended 31st March, 1883	223,421	14	9
Total Charge . . .	£29,060,969	13	1

COINAGE OF THE ROYAL MINT.—The amount of gold, silver, and copper (bronze) moneys coined at the Royal Mint in each year from 1864 to 1882 was as follows:—

Years.	Gold.	Silver.	Copper.
	£	£	£
1864	9,535,597	535,194	18,069
1865	2,367,614	501,732	57,493
1866	5,076,676	493,416	50,624
1867	496,397	193,842	33,301
1868	1,653,384	301,356	16,328
1869	7,372,204	76,428	20,832
1870	2,313,384	336,798	32,704
1871	9,919,656	701,514	7,616
1872	15,261,442	1,243,836	47,413
1873	3,384,568	1,081,674	46,218
1874	1,461,565	890,604	65,632
1875	243,264	594,000	69,813
1876	4,696,648	222,354	61,450
1877	581,468	420,948	51,146
1878	2,265,069	613,998	17,024
1879	35,050	549,054	44,651
1880	4,150 052	761,508	19,264
1881	—	997,128	39,349
1882	—	209,880	42,560

LOCAL TAXATION.—The following table shows the amount of direct and indirect taxation, and of other sources of receipts, for the purposes of local expenditure, in England and Wales, in the years 1879–80 and 1880–81:—

	1879–80.	1880–81.
Local taxes:	£	£
Direct, levied by rates	25,694,477	26,818,914
Indirect, levied by tolls, dues, &c.	4,574,322	5,018,227
Total ..	30,268,799	31,837,141
Other receipts:		
Rents, interest, &c. ..	764,462	804,709
Sales of property ..	536,478	212,835
Government contributions ..	2,733,846	2,708,328
Loans	13,717,911	12,937,528
Miscellaneous ..	4,985,826	5,366,502
Total ..	22,738,523	22,029,902
Total receipts	53,007,322	53,867,043

In Scotland the receipts in 1879–80 were 6,071,000*l.*, and in 1880–81 6,047,000*l.*; in Ireland in 1879–80 the total receipts were 3,869,492*l.*, and in 1880–81 3,872,249*l.* The totals for the United Kingdom were: 1879–80, 62,947,814*l.*, 1880–81, 63,786,292*l.*

POOR RATES.—The following table shows the gross estimated and rateable value of rental assessed to the poor rates for England and Wales, and amount received and expended for relief of the poor from 1868 to 1882:—

Years ended Lady-day.	Rateable Rental Assessed to the Poor Rate.	Total Amount of Poor Rates Received, including Receipts in aid of Poor Rates.	Expended.
	£	£	£
1868	100,668,698	11,472,843	11,380,593
1869	—	11,776,153	11,773,999
1870	104,405,304	12,044,012	11,737,613
1871	107,398,242	12,121,440	12,092,741
1872	109,447,111	12,608,938	12,381,278
1873	112,317,603	12,657,943	12,426,566
1874	115,646,631	12,803,762	12,851,007
1875	119,079,589	13,194,446	12,694,208
1876	—	12,905,395	12,636,942
1877	124,587,474	12,948,174	12,998,237
1878	127,948,380	13,489,712	13,615,297
1879	131,021,019	13,871,118	13,693,184
1880	133,769,875	14,001,512	14,092,102
1881	135,645,473	14,349,592	14,390,262
1882	139,636,307	14,918,273	14,864,739

Bank Rate.—The following Table shows the Average Minimum Rate per cent. of Discount charged by the Bank of England in each Month, in each Year from 1869 to 1882:—

Months.	1869.	1870.	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.
January	3	3	2½	3	4½	3½	4½	4⅝	2	3½	4½	3	3 5/16	5 1/16
February	3	3	2½	3	3½	3½	3½	4	2	2	3	3	3½	5 1/16
March	3	3	3	3	3½	3½	3½	3⅞	2	2 1/16	2⅝	3	3	4
April	4	3	2½	3½	4	3½	3½	2⅞	2	3	2⅛	3	3	3
May	4½	3	2½	4⅝	5¼	4	3½	2	2 7/16	3	2	3	2½	3
June	4	3	2⅜	3½	6¼	2¾	3½	2	3	2½	2	2¼	2½	3
July	3½	3½	2½	3½	4⅜	3	3	2	2¼	3½	2	2½	2½	3
August	2¾	5	2	3½	3¼	3⅝	2¼	2	2 1/4	4⅝	2	2½	2 1/16	3 13/16
September	2½	3½	2⅜	3½	3¼	3	2	2	3	5	2	2½	4	4 1/16
October	2½	2½	2⅞	5⅝	6	3½	3½	2	4½	5½	2	2½	3 3/16	5
November	3	2½	4½	6¼	8⅛	4½	3½	2	4⅞	5⅝	2⅞	2½	5	5
December	3	2½	3¼	5⅜	5¼	6	3	2	4	5	3	2 7/8	5	5
Average for Year	3¼	3⅛	2⅞	4⅛	4⅜	3¾	3¼	2⅝	2⅞	3¾	2⅜	2¾	3½	4⅛

Price of Stock.—The following Table shows the average price per 100*l.* of the Three per Cent. Consolidated Stock of the Public Funds of the United Kingdom in each Month, in each Year from 1869 to 1882:—

Months.	1869.	1870.	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.
January	92⅞	92⅜	92⅜	92⅝	92½	92½	92⅜	93⅜	95¼	95 1/16	95¾	97¼	98⅛	99 1/16
February	93	92½	91½	92½	92¾	92⅛	92 13/16	94 3/16	95 1/16	95 9/16	96½	98⅛	98 5/16	99⅞
March	92⅞	92⅞	92	92¾	92⅝	92	93	94 9/16	96 7/16	95¼	96¾	97⅛	99¼	100⅞
April	93⅛	93⅜	93	92¾	93¼	92½	93¼	94 15/16	95⅝	94 13/16	98¼	98⅛	100 3/16	101⅛
May	93	94⅛	93½	93⅛	93½	93½	94	96	94¾	96 3/16	98¾	99½	102 5/16	102
June	92⅝	92¾	92	92⅜	92½	92⅜	93	94⅛	94⅜	95⅛	97¼	98⅜	100⅛	100¼
July	93	91⅞	93¼	92½	92⅜	92⅝	94¼	95⅛	94⅛	95 13/16	97⅞	98⅜	101⅛	99 3/16
August	93	90⅜	93½	92	92¾	92½	94¾	96 7/16	95⅛	94 13/16	97¾	97⅜	100¾	99½
September	92⅞	92	93⅛	92⅜	92½	92⅝	94⅜	95⅜	95½	94 13/16	97¾	97¾	99⅜	99⅞
October	93⅜	92¼	92¾	92¼	92⅜	92¾	94 9/16	95 7/16	95¾	94¾	98	98 9/16	98 15/16	101 3/16
November	93⅛	92⅜	93¼	92⅜	92⅛	93⅛	94⅛	95¾	96 1/16	95 1/16	98¼	99 5/16	100¾	102 1/16
December	92⅛	91⅞	92¼	91⅝	92	91⅝	93⅞	94	95 1/16	94⅜	97⅜	98¾	99 5/16	100 3/16
Average for Year	92⅞	92½	92¾	92½	92½	92½	93¾	95	95⅜	95 3/16	97½	98⅜	100	100½

NATIONAL DEBT FROM 1866 TO 1883.—The following table shows the total amount of the National Debt at the end of each financial year, 1866 to 1883:—

Financial Years ended 31st March	Funded Debt. Capital of Unredeemed Funded Debt, inclusive of Unclaimed Stock and Dividends.	Funded Debt. Estimated Capital of Terminable Annuities (Computed in 3 per Cent. Stock), at £92·3.	Amount of Unfunded Debt.	Total Amount of National Debt, inclusive of Unclaimed Stock and Dividends.
	£	£	£	£
1866	773,941,190	23,833,621	8,187,700	805,962,511
1867	770,188,625	25,607,076	7,956,800	803,752,501
1868	741,844,981	53,258,874	7,911,100	803,014,955
1869	741,112,640	51,913,623	‡9,896,100	802,922,363
1870	741,514,681	49,667,479	6,761,500	797,943,660
1871	732,043,270	54,413,310	6,091,000	792,547,580
1872	731,756,962	52,286,775	5,155,100	789,198,837
1873	727,374,082	50,201,768	4,829,100	782,404,950
1874	723,514,005	48,024,178	4,479,600	776,017,783
1875	714,797,715	52,311,487	5,239,300	772,348,502
1876	713,657,517	49,078,792	11,401,800†	774,138,109
1877	712,621,355	46,549,819	13,943,800†	773,114,974
1878	710,843,007	43,644,057	20,603,000†	775,090,064
1879	709,430,593	40,345,454	25,870,100†	775,646,147
1880	710,476,359	36,222,976	‡27,344,900†	774,044,235
1881	709,078,526	37,547,666	22,077,500†	768,703,692
1882	*709,498,547	35,539,693	*18,007,700†	763,045,940
1883	*712,698,994	29,492,125	*14,185,400†	756,376,519

* Under the National Debt Act, 1881, Bonds amounting to 7,750,000*l.* were converted into 8,603,006*l.* Stock.

† Including outstanding Exchequer Bonds issued for raising money for the purchase of Suez Canal shares. In 1883 these amounted to 3,591,600*l.*

‡ Including 1,000,000*l.* borrowed in aid of Ways and Means.

RATES OF INCOME TAX 1842–1883.

Year.	Rate.	Year.	Rate.	Year.	Rate.
	s. d.		*s. d.*		*s. d.*
1842–3.. ..	0 7	1856–7.. ..	1 4	1870–1.. ..	0 4
1843–4.. ..	0 7	1857–8.. ..	0 7	1871–2.. ..	0 6
1844–5.. ..	0 7	1858–9.. ..	0 5	1872–3.. ..	0 4
1845–6.. ..	0 7	1859–60 ..	0 9	1873–4.. ..	0 3
1846–7.. ..	0 7	1860–1.. ..	0 10	1874–5.. ..	0 2
1847–8.. ..	0 7	1861–2.. ..	0 9	1875–6.. ..	0 2
1848–9.. ..	0 7	1862–3.. ..	0 9	1876–7.. ..	0 3
1849–50 ..	0 7	1863–4.. ..	0 7	1877–8.. ..	0 3
1850–1.. ..	0 7	1864–5.. ..	0 6	1878–9.. ..	0 5
1851–2.. ..	0 7	1865–6.. ..	0 4	1879–80 ..	0 5
1852–3.. ..	0 7	1866–7.. ..	0 4	1880–1.. ..	0 6
1853–4.. ..	0 7	1867–8.. ..	0 5	1881–2.. ..	0 5
1854–5.. ..	1 2	1868–9.. ..	0 6	1882–3.. ..	0 6⅓
1855–6.. ..	1 4	1869–70 ..	0 5	1883–4.. ..	0 5

Notes.—(*a*). From 1853–4 to 1862–3 a lower rate was charged on incomes from 100*l.* to 150*l.* as follows:—1853–4 at 5*d.*; 1854–5 at 10*d.*; 1855–6 at 11½*d.*; 1856–7 at 11½*d.*; 1857–8 at 5*d.*; 1858–9 at 5*d.*; 1859–60 at 6½*d.*; 1860–61 at 7*d.*; 1861–2 at 6*d.*; and 1862–3 at 6*d.* From 1863 to 1876 incomes under 100*l.* were free of taxation, and there was only one rate for all incomes above that sum, with abatement of 60*l.* on incomes under 200*l.* from 1863 to 1871, and of 80*l.* on incomes under 300*l.* from 1872 to 1875. In 1876 the point of exemption was raised to 150*l.*, and incomes below that amount have since been free of income tax, while for all incomes under 400*l.* no tax is paid upon the first 120*l.*

LOCAL TAXATION IN ENGLAND AND WALES.—The following table is compiled from a return issued under an order of the House of Commons in April, 1883, by the Local Government Board, and shows the local taxes raised in 1881 under the various heads of rating and the loans outstanding against the authorities under the same heads at the end of the year 1881:—

Local Taxes.	Raised in 1881.	Loans outstanding, 1881.
I.—RATES:	£	£
Poor	7,969,815	5,271,303
County	1,456,807	2,995,311
Borough	1,349,128	6,495,112
Highway	1,821,041	49,580
Metropolitan local management	1,754,341	2,411,477
Metropolitan Board of Works	620,957	15,245,229
Metropolitan police	555,844	
City of London police	75,511	
City of London ward	6,142	
Urban sanitary:		
(*a*) Raised by town councils	6,446,051	53,213,834
(*b*) Raised by other sanitary authorities (less amount paid to joint boards)	2,465,971	12,818,333
Rural sanitary	283,896	1,081,056
Port sanitary	[2,385]	5,237
Lighting and watching	37,884	
Sewers	57,817	78,519
Drainage and embankment	202,380	1,535,740
Burial board	130,229	1,717,612
School board	1,562,385	10,858,988
Church	11,996	41,800
Total of rates	£26,808,225	113,819,131

METROPOLITAN TAXATION.—The following table shows the amount of local taxes raised in the metropolis only in 1881, and the loans outstanding against the authorities at the end of the year:—

	Local taxes raised in 1881.	Loans outstanding at end of 1881.
I.—RATES:	£	£
Poor	1,807,197	2,831,364
Police and county	608,050	
Metropolitan local management	1,754,341	2,411,477
Metropolitan Board of Works	620,957	15,245,229
School board	585,567	3,790,130
City of London police and ward	81,653	
Burial board	7,696	121,421
Church	5,351	16,800
Total of rates	£5,470,812	£24,416,421
II.—TOLLS, DUES, AND RENTS:		
Metropolitan Board of Works	98,977	
City's estate (rents, tolls, dues and fees)	299,670	
School board fees	80,575	
Burial board fees	32,473	
Total of rents, tolls, dues, &c.	£511,695	5,274,800
III.—DUTIES:		
Levied by city of London	428,746	
Total of local taxes	£6,411,253	£29,691,221

2. GENERAL COMMERCE AND NAVIGATION.

NAVIGATION RETURNS.—The subjoined table shows the tonnage of British and Foreign vessels (sailing and steam) entered and cleared, *with cargoes*, at ports in the United Kingdom, from and to foreign countries and British Possessions, from 1864 to 1882:—

Years.	Entered.			Cleared.		
	British.	Foreign.	Total.	British.	Foreign.	Total.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1864 ..	7,813,179	3,488,931	11,302,110	8,596,234	3,576,540	12,172,774
1865 ..	8,356,914	3,801,780	12,158,694	9,056,729	3,770,422	12,827,151
1866 ..	9,215,820	4,061,370	13,277,190	9,954,147	4,055,947	14,010,094
1867 ..	9,356,814	3,984,634	13,341,448	10,586,058	4,261,523	14,847,581
1868 ..	9,572,450	4,279,207	13,851,657	10,902,171	4,570,848	15,473,019
1869 ..	10,042,182	4,444,518	14,486,700	11,313,757	4,603,227	15,916,984
1870 ..	10,308,952	4,601,790	14,910,742	11,934,087	4,779,851	16,713,938
1871 ..	11,250,120	5,205,222	16,455,342	13,396,583	5,650,872	19,047,455
1872 ..	12,139,805	5,766,135	17,905,940	13,574,471	5,673,881	19,248,352
1873 ..	12,474,912	6,320,145	18,795,057	13,653,030	5,486,335	19,139,365
1874 ..	12,751,128	6,330,278	19,081,406	14,010,786	5,742,701	19,753,487
1875 ..	12,852,351	6,187,577	19,039,928	14,454 989	5,958,750	20,413,739
1876 ..	13,672,122	7,354,549	21,026,671	15,201,602	6,309,111	21,510,713
1877 ..	14,894,448	7,237,176	22,131,624	15,358,033	5,837,323	21,195,356
1878 ..	14,513,688	6 804,558	21,318,246	15,783,488	5,798,200	21,581,688
1879 ..	15,039,579	6,059,765	21,099,344	17,095,146	5,754,211	22,849,357
1880 ..	17,018,011	6,975,269	23,993,280	18,867,857	6,817,813	25,685,670
1881 ..	16,864,668	6.360,040	23,224,708	19,605,532	6,731,161	26,336,693
1882 ..	17 810,380	7,004,669	24,815,049	20,392,626	7,306,237	27,698,863

IMPORTS INTO THE UNITED KINGDOM.—The following table gives the quantities of the chief articles imported into the United Kingdom in the year ended the 31st of December, 1882:—

Articles.		Quantity.
Animals:—		
Oxen, Bulls, Cows, and Calves	No.	343,699
Sheep and Lambs	,,	1,124,391
Bacon and Hams	Cwts.	2,904,400
Beef	,,	692,383
Bones, except Whalebone	Tons	63,451
Brimstone	Cwts.	945,561
Bristles	Lbs.	2,558,297
Butter and Butterine	Cwts.	2,169,717
Candles of all sorts	,,	109,323
Caoutchouc	,,	181,726
Cheese	,,	1,694,623
Clocks	No.	950,634
Cocoa	Lbs.	19,101,646
Coffee	Cwts.	1,364,084
Corn, Wheat	,,	64,240,749
—— Barley	,,	15,540,112
—— Oats	,,	13,638,457
—— Maize	,,	18,275,731
—— Other kinds	,,	4,600,631
—— Flour of Wheat	,,	13,057,403
—— —— Of other kinds	,,	315,913
Total of Corn	,,	129,668,996
Cotton, Raw	,,	15,929,564

Articles.		Quantity.
Dyeing or Tanning Stuffs:—		
Cochineal, Granilla, and Dust	Cwts.	26,330
Cutch and Gambier	Tons	30,048
Indigo	Cwts.	95,272
Garancine, Madder, Madder Root and Munjeet	,,	23,397
Shumach	Tons	13,935
Valonia	,,	35,604
Eggs	No.	813,922,400
Fish	Cwts.	1,239,217
Flax and Hemp:—		
Flax, Dressed and Undressed	,,	1,645,544
Tow or Codilla of Flax and Hemp	,,	420,567
Hemp and other like Substances (except Jute), Dressed and Undressed	,,	1,313,398
Jute	,,	5,937,842
Fruits:—		
Currants	,,	1,012,102
Raisins	,,	548,911
Oranges and Lemons	Bush.	4,220,427
Glass of all Kinds	Cwts.	1,339.444
Guano	Tons	44,952
Gutta-percha	Cwts.	72,936
Hair:—		
Goats' Hair or Wool	Lbs.	16,945,675
Hides, Raw, Dry, and Wet	Cwts.	1,190,667

Articles.		Quantity.
Hops	Cwts.	319,620
Lard	,,	667,153
Leather	Lbs.	75,217,794
Leather Gloves	Pairs	19,383,696
Meat, Salted or Fresh	Cwts.	201,319
—— Preserved, other than Salted	,,	560,581
Metals:—		
Copper Ore and Regulus	Tons	152,068
Copper, Unwrought and part Wrought, and old Copper	Cwts.	755,660
Iron, in Bars	Tons	139,229
Iron and Steel, Wrought or Manufactured	Cwts.	3,444,316
Lead, Pig and Sheet	Tons	87,853
Tin, in Blocks, Ingots, Bars, or Slabs	Cwts.	485,737
Zinc, Crude, in Cakes	Tons	41,876
—— Manufactures	Cwts.	363,478
Oil, Fish	Tuns	15,945
—— Palm	Cwts.	813,870
—— Cocoa Nut	,,	133,782
—— Olive	Tuns	23,450
—— Seed	,,	14,507
—— Turpentine	Cwts.	358,094
Oil Seed Cake	Tons	190,427
Paper, for Printing or Writing	Cwts.	188,111
Petroleum, Unrefined	Galls.	59,695,982
—— Refined		
Pork	Cwts.	290,587
Potatoes	,,	2,990,709
Pyrites of Iron or Copper	Tons	627,700
Rags and Paper-making Materials:—		
Rags	,,	21,200
Esparto and other Materials	,,	251,594
Rice, not in the Husk	Cwts.	8,260,175
—— in the Husk	Qrs.	—
Rosin	Cwts.	1,229,796
Saltpetre	,,	322,024
—— Cubic Nitre	,,	1,915,138
Seeds:—		
Clover and Grass	,,	354,083
Cotton	Tons	209,689
Flax or Linseed	Qrs.	2,433,132
Rape	,,	548,806
Silk Knubs or Husks and Waste	Cwts.	44,277
Silk, Raw	Lbs.	3,377,119
—— Thrown	,,	294,207
Skins:—		
Sheep and Lamb, Undressed	No.	8,165,718
Seal	,,	566,150
Goat, Undressed	,,	3,620,868
Spices:—		
Cinnamon	Lbs.	1,838,039
Pepper	,,	24,777,174
Of all other sorts	,,	20,186,363
Spirits:—		
Rum	Pf. Gals.	7,305,679
Brandy	Pf. Gals.	2,157,898
Other Foreign and Colonial Spirits	,,	1,628,159
Total of Spirits	,,	11,091,736
Sugar, Refined and Sugar Candy	Cwts.	2,766,123
—— Raw	,,	19,839,225
—— Molasses	,,	207,974
Tallow and Stearine	,,	1,116,581
Tea	Lbs.	210,663,133
Teeth, Elephants', Sea-Cow, and Sea Horse	Cwts.	9,381
Tobacco, Manufactured, Cigars, and Snuff	Lbs.	4,086,520
—— Unmanufactured	,,	36,075,370
Wine	Gals.	15,715,813
Wood and Timber:—		
Hewn	Loads	2,022,656
Sawn or Split	,,	4,198,311
Staves	,,	126,051
Mahogany	Tons	36,478
Wool,—Sheep, Lamb, Alpaca, and the Llama Tribe	Lbs.	488,985,057
Woollen Rags	Tons	37,511
Woollen and Worsted Yarn:—		
Berlin Wool and Yarn used for Fancy Purposes	Lbs.	938,819
Yarn for Weaving	,,	12,731,339
Yeast, Dried	Cwts.	217,799

EXPORTS OF HOME PRODUCE FROM THE UNITED KINGDOM.—The following table shows the quantities of the chief articles of British and Irish produce and manufactures exported from the United Kingdom in the year ended the 31st of December, 1882:—

Principal Articles.		Quantity.
Alkali	Cwts.	6,735,800
Animals: Horses	No.	6,444
Arms and Ammunition:—		
Firearms (Small)	No.	229,134
Gunpowder	Lbs.	14,183,000
Bags, Empty	Dozs.	4,353,371
Beer and Ale	Brls.	437,273
Books, Printed	Cwts.	121,607
Butter	,,	31,640
Candles, of all sorts	Lbs.	4,979,500
Carriages, Railway	No.	—
Cement	Cwts.	6,873,400
Cheese	,,	16,149
Coals, Cinders, and Fuel	Tons	20,934,448
Cordage and Twine	Cwts.	163,811
Corn: Wheat	,,	206,694
—— Wheat Flour	,,	97,658
Cotton Yarn	Lbs.	238,254,700

Principal Articles.		Quantity.
Cotton Manufactures:—		
Piece Goods, White or Plain	Yds.	2,959,882,500
—— Printed, Checked, or Dyed	,,	1,349,874,700
——, of Mixed Materials	,,	39,633,800
Total of Piece Goods	,,	4,349,391,000
Stockings	Doz. Prs.	2,001,954
Thread for Sewing	Lbs.	15,527,200
Fish: Herrings	Brls.	918,910
Glass: Plate	Sq. Ft.	3,610,350
—— Flint	Cwts.	124,693
—— Common Bottles	,,	786,173
—— Of other Sorts	,,	137,648
Hats of all Sorts	Dozs.	1,205,612
Leather, Tanned, Unwrought	Cwts.	165,503
—— Wrought, Boots and Shoes	Doz. Prs.	634,404
—— of other Sorts	Lbs.	—
Linen and Jute Yarn:		
Linen Yarn	,,	18,156,400
Jute Yarn	,,	21,854,500
Linen and Jute Manufactures:—		
Linen Manufactures:		
White or Plain	Yds.	165,899,200
Printed, Checked, or Dyed	,,	6,952,400
Sailcloth and Sails	,,	3,599,400
Total of Piece Goods	,,	176,451,000
Thread for Sewing	Lbs.	2,796,000
Jute Manufactures	Yds.	212,482,600
Metals:—		
Iron, Old, for remanufacture	Tons	132,033
—— Pig, and Puddled	,,	1,758,072
—— Bar, Angle, Bolt, and Rod	,,	313,155
—— Railroad, of all Sorts	,,	936,949
—— Wire	,,	86,653
—— Hoops, Sheets, and Boiler Plates	,,	342,599
—— Tinned Plates	,,	265,039
—— Cast, wrought, and all other manufactures	,,	328,262
—— Steel, unwrought	,,	172,329
—— Manufactures of Steel, or of Steel and Iron combined	,,	18,461
Total of Iron and Steel	,,	4,353,552
Copper, Unwrought:—		
Ingots, Cakes or Slabs	Cwts.	254,438

Principal Articles.		Quantity.
Copper, Wrought or partly Wrought:—		
Mixed or Yellow Metal	Cwts.	362,941
Of other Sorts	,,	313,978
Brass of all Sorts	,,	99,418
Lead, Pig, Sheet, and Pipe	Tons	37,375
Tin, Unwrought	Cwts.	110,539
Zinc, Wrought and Unwrought	,,	171,794
Oil, Seed	Gals.	14,041,900
Paper (other than Hangings)	Cwts.	584,947
Salt	Tons	956,122
Silk Manufactures:—		
Broad Piece Goods	Yds.	7,662,340
Soap	Cwts.	409,437
Spirits, British	Gals.	2,609,879
Sugar, Refined	Cwts.	1,047,137
Wool, Sheep and Lambs'	Lbs.	13,846,400
Woollen and Worsted Yarn	,,	31,832,700
Woollen and Worsted Manufactures:—		
Cloths, Coatings, &c., Unmixed and Mixed	Yds.	54,129,600
Flannels, Blankets, Blanketing, and Baizes	,,	17,317,700
Worsted Stuffs, Unmixed and Mixed	,,	182,444,500
Carpets and Druggets	,,	11,318,700

Exports of Foreign and Colonial Produce.—The following table shows the value of the total exports of foreign and colonial produce exported from the United Kingdom to foreign countries and British possessions in 1882:—

I. Foreign Countries.

Countries.	Value. £
Russia, Northern Ports	2,470,574
—— Southern Ports	395,147
Sweden and Norway	1,479,123
Denmark proper and Iceland	321,440
—— Danish West Indies	7,198
Germany	12,006,628
Holland	6,872,567
—— Java, and other Possessions in the Indian Seas	81
Belgium	7,036,903
France	12,337,215
—— Algeria	6,928
—— Possessions in Senegambia	9,523
—— Possessions in India	86
Portugal	411,071
—— Azores and Madeira	34,080
Spain and the Balearic Isles	1,178,044
—— Canary Islands	11,114
—— Fernando Po	3,418

Countries.	Value. £
Spain, West India Islands	832,812
—— Philippine Islands	32,191
Italy	986,417
Austrian Territories	414,105
Greece	148,107
Roumania	55,080
Turkey	548,332
Egypt	169,915
Morocco	134,881
United States	7,738,496
Mexico	96,084
Central America	27,858
Haiti and San Domingo	8,555
New Granada (United States of Columbia)	71,784
Venezuela	3,796
Ecuador	14,028
Brazil	449,632
Uruguay	29,516
Argentine Confederation	98,769
Chili	152,358
Peru	183,652
China (exclusive of Hong Kong)	278,597
Japan	281,512
Western Coast of Africa (exclusive of French and Spanish Possessions separately stated)	204,720
Other Countries	104,133
Total to Foreign Countries	£57,682,370

III. British Possessions.

Channel Islands	208,984
Gibraltar	98,726
Malta	189,336
North American Colonies	982,985
West India Islands and Guiana	299,735
British Honduras	27,622
Australia	3,085,664
British India	1,522,533
The Straits Settlements	157,034
Ceylon	41,910
Hong Kong	111,354
Mauritius	54,452
Cape of Good Hope and Natal	582,061
West Africa Settlements	41,958
Possessions on the Gold Coast	40,720
Other Possessions	66,108
Total to British Possessions	7,511,182
Total to Foreign Countries and British Possessions	£65,193,552

Suez Canal.—Return of Shipping and Tonnage that passed through the Suez Canal from the date of its opening in November, 1869, to the 31st December, 1882. The English vessels included in the total being also shown separately :—

Year.	Total vessels.	Gross tonnage.
1869	10	9,436
1870	486	654,915
1871	765	1,142,200
1872	1,082	1,744,481
1873	1,173	2,085,072
1874	1,264	2,423,672
1875	1,494	2,940,708
1876	1,457	3,072,107
1877	1,663	3,418,950
1878	1,593	3,291,536
1879	1,477	3,236,942
1880	2,026	4,344,519
1881	2,727	5,794,401
1882	3,198	7,122,125

The following table shows the number of vessels and tonnage that passed through the Suez Canal during the year 1882, arranged under their respective flags :—

Flag.	Number of vessels.	Gross tonnage.
Great Britain	2,565	5,795,584·36
France	165	405,846·42
Holland	103	254,274·54
Germany	109	176,764·76
Italy	61	153,493·85
Austria-Hungary	67	121,711·58
Spain	32	78,663·83
Russia	18	36,061·71
Norway	20	35,502·93
Belgium	13	24,326·77
Egypt	21	13,973·42
Turkey	10	11,235·79
China	4	5,684·76
Portugal	2	2,794·99
Denmark	2	2,786·67
Zanzibar	1	2,344·13
Greece	4	984·11
America	—	—
Brazil	—	—
Liberia	—	—
Japan	—	—
Sweden	—	—
Siam	1	91·06
Sarawak	—	—
	3,198	7,122,125·68

It will be seen than the tonnage of vessels sailing under the English flag still keeps its high position as compared with that of all other nations, having formed in 1880 nearly 80 per cent., in 1881, 82 per cent., and in 1882, 81 per cent. of the total net tonnage passing through the Canal.

3. TRADE AND AGRICULTURE.

FISH EXPORTS.—The following table shows the aggregate of the quantities of each description of fish exported from the United Kingdom in each year from 1873 to 1882, and the total value of fish of British taking of all kinds exported in the same period:—

Year.	Salmon.	Cod.	Herrings.	Oysters.	Pilchards.	Value of unenumerated fish.	Total value of fish of all kinds.
	Cwts.	Cwts.	Barrels.	Bushels.	Hhds.	£	£
1873....	7,705	34,929	723,666	25,180	24,767	55,882	1,295,896
1874....	5 998	29,559	852,630	23,730	15,389	52,915	1,441,217
1875....	5,586	37,350	684,755	14,204	9,567	67,379	1,192,481
1876....	6,556	34,528	426,588	12,547	4,639	67,332	952,804
1877....	6,932	37,596	649 748	8,610	10,920	105,485	1,345,603
1878....	8,018	63,432	664,852	10,291	12,117	139,149	1,280,900
1879....	6,658	46,504	637,072	6,455	10,910	182,830	1,417,155
1880....	6,333	41,259	1,072,397	9,146	11,770	179,110	1,779,261
1881....	7,533	50,051	805,170	9,837	14,374	177,853	1,626,085
1882....	5,419	*	918,910	*	10,799	365,101	1,816,702

* Included in value of unenumerated fish.

SPIRITS.—The quantity of spirits charged with duty in England and Wales in 1882–3 was 13,587,389 gallons, a reduction of 280,617 as compared with 1881–2; in Scotland 8,729,169 gallons, an increase of 108,944 gallons; in Ireland 7,454,163 gallons, an increase of 261,834: in the United Kingdom 29,770,721, an increase of 90,161 gallons. When we turn to the quantities of spirits consumed as beverages in the United Kingdom we find a decrease in England and Scotland, and although there was an increase in Ireland, the general total of the kingdom shows a decrease. In England the consumption was 16,655,808 gallons, a decrease of 294,270; in Scotland 6.496,070 gallons, a decrease of 46,254; in Ireland, 5,377,452 gallons, an increase of 245,667; and in the United Kingdom 28,529,330 gallons, a decrease of 94,857. The Inland Revenue Commissioners, in their report, say:—"The decrease in the consumption in England and Scotland appears comparatively small, but it becomes more significant of altered habits when considered in connection with the natural increase which must have taken place in the population. There cannot be any doubt that in some localities the spread of temperance principles has already caused a marked diminution in the consumption of intoxicating liquors, and the tendency is still increasing. On the other hand, it is remarkable to find in Ireland, in spite of an estimated decrease of population, an increased consumption of 245,667 gallons." The number of gallons of spirits exported in 1882–3 was 2,8:5,644, a decrease of 64,178 gallons. The Commissioners say that there is reason to believe that this is merely a temporary check owing to dulness of trade in Australia. The decrease in the exports of spirits to France is due to displacement by the cheaper German spirit. An increase in the exports to British India and British North America arise from a demand for finer spirits than those countries yet produce for themselves.

BEER.—The Inland Revenue Commissioners report that the number of barrels of beer charged with duty brewed in England and Wales in the year ended March 31st, 1883, was 23,874,632; in Scotland, 1,122,360; in Ireland, 2,143,899; giving a total for the United Kingdom of 27,140,891, as compared with 27,687,562 in the preceding year. The receipts on this head the Commissioners say, fell short of their expectations. The gross charge for the year amounted to 8,570,746*l.*; deducting from this the sum repaid in respect of beer exported, the net receipt amounted to 8,400,368*l.*, as against the Commissioners' estimate of 8,550,000*l.*; thus showing a decrease on the estimate of 149,632*l.*, and on the net receipt for the previous year of 130,450*l.* As in the case of spirits, the decrease in duty may, to some extent, they believe, be due to the influence of temperance societies; but, however that may be, it is certain that brewers met with great discouragement by the failure of the hop crops, not only in England, but in every other country in which the plant is cultivated. The result being an increase in price from an average of 6*l.* 10*s.* to above 22*l.* per hundredweight.

Owing to the scarcity of hops, other vegetable substances were used by some brewers, along with hops, under the name of "hop supplements." The number of persons who availed themselves of the licence at 9*s*. to brew solely for domestic use, occupy-houses not exceeding 15*l*. in annual value, was in England, 7,328; Scotland, 67; Ireland, 0; total, 7,395. The 6*s*. licence to persons occupying houses not exceeding 10*l*. in rental was taken out in England by 87,011 persons, in Scotland by 2,269, and in Ireland by 1.

THE WOOL TRADE.—The remarkable depression in the value of wool which exists at the present moment renders interesting the facts contained in a recent summary in the "Times," showing the leading fluctuations in the value of this product during the last 100 years. Of course it ought to be borne in mind that during this period a wonderful change has been effected. The restricted domestic system of a working master with a few apprentices, and one or two journeymen regulated by statute, and the hours of labour and the rate of wages determined by the justices of the peace, has given place to the factory system and the aggregation of vast numbers of men and wealthy employers. A century ago the great inventions of the mule and the power loom were but being brought into existence to add enormously to the power of production. A century ago the value of English lustre wool of good average quality was almost exactly 14*s*. 6*d*. per tod, and the value appears to have gone on increasing until 1791, when 20*s*. per tod was reached. Prices subsequently fluctuated very much and a backward movement reduced prices to 16*s*. 6*d*. per tod in 1797, as against 24*s*. per tod in 1792. Several rises and falls took place in succeeding years till 1802, when an upward bound brought values to 31*s*. per tod, which must at that time have seemed a very excessive price. Prices again fell, but a revival taking place rates were maintained at 28*s*. to 33*s*. per tod up to 1813. But next year (1814) a sudden bound took place and values rose to 44*s*., and in 1815 50*s*. per tod was touched, a remarkably high point. The relapse came no less suddenly, for next year (1816) 32*s*. per represented the value of good grown wool. After these fluctuations a period of calm attended the prices of wool, and from this time up to 1832 the value was little altered, the range being from 28*s*. to 32*s*., but in the autumn of 1834 another upward bound was experienced when wool jumped up suddenly to 46*s*. per tod, and the value remained above 40*s*. for a considerable time. But in 1843 a great drop took place, and at midsummer of that year only 25*s*. 6*d*. could be secured for excellent wool. The next three years brought up the level of prices to between 30*s*. and 32*s*. per tod, but during the years 1847 and 1848 a fall brought rates to 27*s*., while in 1849 the extraordinary low limit of 22*s*. per tod was reached. Next year 26*s*. was secured, and in the year after that (1851) 30*s*. was made of wool, increasing to 37*s*. in 1853. In 1863 an upward movement brought prices suddenly to 52*s*., but in 1864 the rates touched 65*s*. per tod, being the highest price reached in the century for wool. The succeeding year brought back values to 59*s*. per tod, and in 1866 they had fallen to 43*s*. 6*d*., and the fluctuations were but little marked until 1870, when there was a sudden drop to 30*s*. Recovery was quick, for next year the figures were 47*s*. per tod, and the year after that (1872) 58*s*. per tod. From that time up to within a few weeks ago the history of the wool market has been in the main one of gradual decline. There was, it is true, a rise of 7*s*. per tod in 1879 to 1880, namely, from 27*s*. to 34*s*. per tod, but in 1881 26*s*. represented the value of fine-grown English wool. Low as this limit was next year (1882) showed only 24*s*. per tod, and the present year (1883) again brought the level of prices to the remarkably low figure of 22*s*. per tod, the lowest point recorded since 1849, and, with the exception of that single depression—which lasted only for one year—the most remarkable decline in value which has been experienced in the present century. From the highest point of 65*s*. in 1864 to that of 22*s*. at the present moment, there is represented a startling decline, and the difference in the value of the clip of English wool at these widely varying figures is something enormous. It may be interesting to point out that taking the wool produce of England at 5,500,000 tods per annum, the value of this produce in the year 1864 was 17,554,166*l*., whereas the same quantity at the present moment would represent a value of 9,104,427*l*.—that is taking the mean average price of wool in 1864 at 63*s*. 10*d*. per tod, and at the present moment at 22*s*. 2¾*d*. per tod. The difference in value between the produce of these two years is thus no less than 11,449,739*l*.—a sum which indicates how enormous has been the shrinkage in the value of this portion of agricultural produce in the course of 19 years.

HOME CONSUMPTION OF SPIRITS, WINES, TEA, &c.—The quantity per head of the population of the undermentioned articles consumed in 1882 was as follows:—British spirits ·809 gallon per head; foreign and colonial spirits ·236 gallon; gallons per head of spirits of all kinds 1·045; foreign wines ·409 gallon; beer ·766 barrel; tea 4·679 lbs; coffee ·906 lb.; cocoa ·339 lb.

AVERAGE GAZETTE PRICES OF BRITISH WHEAT, BARLEY, and OATS, per IMPERIAL QUARTER in EACH MONTH in 1867, 1870, 1873, 1876, 1879, 1881, and 1882.

MONTHS.	1867.	1870.	1873.	1876.	1879.	1881.	1882.
	WHEAT.						
	s. d.	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*
January ..	61 4	43 8	55 9	44 9	39 3	42 5	45 7
February ..	60 10	41 3	56 4	43 1	38 0	41 9	46 0
March ..	59 9	41 5	55 6	43 0	39 7	42 7	44 7
April	61 6	42 7	54 10	44 11	41 0	44 6	45 11
May	64 8	44 6	56 0	45 1	41 0	44 5	47 3
June	65 4	47 5	58 7	47 5	41 9	44 6	47 5
July	65 0	50 10	59 6	48 3	44 6	46 5	48 5
August ..	67 8	53 10	60 6	46 0	49 1	48 6	50 0
September ..	62 8	47 3	64 2	46 8	47 6	52 3	43 11
October ..	66 6	47 0	60 10	46 6	48 10	47 1	39 7
November ..	69 5	50 1	60 9	47 11	48 9	45 11	40 10
December ..	67 4	52 4	61 8	49 9	46 7	44 7	41 2
The Year ..	64 5	46 10	58 8	46 2	43 11	45 4	45 1
	BARLEY.						
January ..	44 3	35 11	40 1	34 5	37 6	32 0	32 9
February ..	44 4	34 5	40 4	33 5	35 8	32 5	32 2
March	41 0	34 0	39 10	32 8	33 10	31 10	30 3
April	39 6	34 7	39 1	33 10	31 8	31 11	29 9
May	38 10	33 3	38 4	34 1	29 8	31 5	28 4
June	36 2	32 8	37 2	32 11	27 2	30 5	27 7
July	35 2	31 7	36 6	32 9	26 4	27 9	26 10
August ..	37 3	33 8	37 7	32 2	29 5	29 5	28 0
September ..	39 11	36 1	43 11	37 8	38 8	34 5	36 0
October ..	41 3	36 7	43 9	39 4	40 9	35 1	34 3
November ..	42 2	36 7	44 0	39 3	40 1	34 5	34 3
December ..	40 11	35 4	44 9	38 9	38 4	32 1	33 10
The Year ..	40 0	34 7	40 5	35 2	34 0	31 11	31 2
	OATS.						
January ..	24 0	20 8	22 2	24 2	20 0	20 1	20 5
February ..	24 3	20 2	21 11	24 5	19 9	20 6	20 11
March ..	24 7	20 11	23 3	25 1	20 6	21 7	21 2
April	24 9	21 2	23 10	25 8	20 10	22 1	21 9
May	26 0	23 0	25 4	26 7	21 11	22 10	22 5
June	27 5	23 9	26 7	28 1	22 4	23 4	23 5
July	28 0	26 1	28 9	29 10	22 11	23 7	24 8
August ..	28 8	26 9	28 7	29 0	23 9	24 0	24 4
September ..	26 11	23 5	27 7	26 7	24 9	23 1	21 11
October ..	25 8	22 3	25 3	25 3	22 6	20 0	19 7
November ..	25 11	23 5	25 4	25 7	21 5	20 4	20 4
December ..	25 2	23 4	26 1	25 1	21 1	20 3	20 10
The Year ..	26 0	22 11	25 5	26 3	21 10	21 9	21 10

4. POPULATION, PUBLIC EMPLOYMENT, AND VITAL STATISTICS.

Population of the United Kingdom in 1882 and 1883.—The estimated population of the United Kingdom in the middle of 1882 and 1883, exclusive of the Army, Navy, and Merchant Seamen abroad was as follows:—

	1882.	1883.
England and Wales ..	26,406,820	26,762,974
Scotland ..	3,785,400	3,825,744
Ireland ..	5,097,730	5,042,572
Totals ..	35,289,950	35,631,290

Estimated growth of population .. 341,340

Births, Marriages, and Deaths.—The following table shows the total number of births, deaths, and marriages from 1868 to 1882:—

England and Wales.

Years.	Births.	Deaths.	Marriages.
1868	786,808	480,622	176,962
1869	773,381	494,828	176,970
1870	792,787	515,329	181,655
1871	797,428	514,879	190,112
1872	825,907	492,265	201,267
1873	829,778	492,520	205,615
1874	854,956	526,632	201,010
1875	850,607	546,453	201,212
1876	887,968	510,315	201,874
1877	888,200	500,496	194,352
1878	891,906	539,872	190,054
1879	880,389	526,255	182,082
1880	881,643	528,624	191,965
1881	883,642	491,935	197,290
1882	888,940	516,783	203,905

Scotland.

1868	115,673	69,386	21,853
1869	113,395	75,789	22,083
1870	115,423	74,067	23,788
1871	116,127	74,644	23,966
1872	118,873	75,741	25,580
1873	119,738	76,857	26,730
1874	123,795	80,676	26,247
1875	123,693	81,785	25,921
1876	126,749	74,122	26,503
1877	126,824	73,946	25,790
1878	126,707	76,775	24,333
1879	125,736	73,329	23,462
1880	124,652	75,795	24,489
1881	126,214	72,301	25,948
1882	126,182	72,966	26,574

Ireland.

Years.	Births.	Deaths.	Marriages.
1868	146,108	86,803	27,753
1869	145,659	89,573	27,277
1870	150,151	90,695	28,835
1871	151,665	88,720	28,960
1872	149,292	97,577	27,114
1873	144,377	97,537	26,270
1874	141,288	91,961	24,481
1875	138,320	98,114	24,037
1876	140,469	92,324	26,388
1877	139,659	93,543	24,722
1878	134,117	99,629	25,284
1879	135,328	105,089	23,254
1880	128,086	102,906	20,363
1881	125,847	90,035	21,826
1882	122,715	88,737	22,058

Ireland.—During the year 22,058 marriages, 122,715 births, and 88,737 deaths were registered; in the same period (according to the returns obtained by the Royal Irish Constabulary and the Metropolitan Police, who acted as enumerators at the several Irish seaports) 89,136 persons emigrated. A decrease of 55,158 would thus appear to have taken place in the population. The estimated population in the middle of the year was 5,097,730. The number of marriages registered in 1882 was 22,058, being equal to a ratio of 1 in 231, or 4·33 per 1,000, of the estimated population in the middle of the year. Of this number, 15,248 were registered under the provisions of the 26 & 27 Vic., cap. 90, and 6,810 under the 7 & 8 Vic., cap. 81, being equal respectively to 1 marriage in every 256 Roman Catholics and 1 in every 176 Protestants. The births registered in Ireland during the year number only 122,715—63,108 boys and 59,607 girls—affording a ratio of 1 in every 41·5, or 24·1 per 1,000 of the population, against an average rate of 26·0 per 1,000 for the previous ten years. The number of deaths registered was 88,737—43,906 males and 44,831 females—equal to a ratio of 1 in every 57·4, or 17·4 per 1,000 of the population, being 0·9 per 1,000 persons under the average rate for the ten years 1872–81, and 0·1 under the rate for 1881. Of the 88,737 deaths registered during the year, 11,791, or 13·3 per cent. were of children under 1 year old, and 35,301, or 39·8 per cent., were of persons aged 60 years and upwards; the deaths of infants under 1 year old are equal to 96 per 1,000 births registered.

5. CRIME, PAUPERISM, AND ACCIDENTS.

ACCIDENTAL DEATHS IN FISHING VESSELS, 1880-82.—The following table shows the number of accidental deaths reported to the Registrar-General of Seamen as having occurred in fishing vessels during the years 1880-81-82:—

Year.	No. of vessels.	Average No. of crew, all told.	Drowned by wreck.	Drowned by accident other than wreck.	Other accidental deaths.	Total deaths.
1880..	117	794	189	92	1	282
1881..	115	760	224	83	5	312
1882..	104	718	175	109	2	286
Total for the 3 years..	336	2,272	588	284	8	880

PAUPERISM AND ITS COST.—From a return issued to the House of Commons by the Local Government Board dated August, 1883, we extract the following figures, showing the population of each division of England and Wales; number of paupers in receipt of relief on the 1st Jan.. 1882, the total amount of relief to the poor during the year ended the 25th March, 1882, in England; and the ratio of the cost of relief to each head of the population:—

Divisions and union counties.	Population, 1881.	Pauperism.		Total cost of relief.	Ratio of cost per head of population.
		Total.	Of whom were indoors.		
				£	s. d.
Metropolis	3,814,571	104,824	53,501	2,090,753	11 0
South Eastern	2,486,151	81,371	21,397	836,697	6 9
South Midland	1,596,401	61,337	11,537	548,176	6 10
Eastern	1,342,923	53,202	10,141	463,860	6 11
South Western	1,858,446	86,642	12,232	657,602	7 1
West Midland	3,029,362	102,679	21,535	827,150	5 6
North Midland	1,637,624	45,107	8,249	422,238	5 2
North Western	4,107,155	89,125	27,323	891,130	4 4
York Division	2,894,527	73,326	13,679	644,000	4 5
Northern..	1,624,468	39,616	7,272	338,556	4 2
Welsh	1,577,018	66,152	6,933	512,310	6 6
Total of Unions of England..	25,968,286	803,381	193,899	3,232,472	6 4

The district sabove named comprise the undermentioned counties or parts of counties: *Metropolis*—parts of Middlesex, Surrey and Kent; *South-Eastern*—parts of Surrey and Kent, Sussex, Southern Berks; *South-Midland*—part of Middlesex, Hertford, Buckingham, Oxford, Northampton, Huntingdon, Bedford, Cambridge; *Eastern*—Essex, Suffolk, Norfolk; *South-Western*—Wilts, Dorset, Devon, Cornwall, Somerset; *West-Midland*—Gloucester, Hereford, Salop, Stafford, Worcester, Warwick; *North-Midland*—Leicester, Rutland, Lincoln, Nottingham, Derby; *North-Western*—Chester, Lancaster; *York Division*—West Riding, East Riding, North Riding; *Northern*—Durham, Northumberland, Cumberland, Westmorland; *Welsh*—Monmouth, North Wales, South Wales.

CRIME IN THE METROPOLIS.—In the report of the Commissioner of Police of the Metropolis for the year 1882, Sir Edmund Y. W. Henderson places the total strength of the police in the Metropolis at 11,699; 23,301 houses were built during the year, forming 508 new streets and one new square, covering a distance of 75 miles

and 862 yards; 3,581 persons were arrested for assaults, more or less serious, on police officers; on three occasions firearms were used, in one case fatally. The total number of offences for which apprehensions were effected increased from 77,377 in 1881 to 78,416 in 1882. Simple drunkenness decreased from 8,567 in 1881 to 7,042 in 1882; while disorderly characters increased from 4,819 in 1881 to 5,392 in 1882. The total number of felonies committed was 24,754, an increase of 1,085. The apprehensions were 14,347, an increase of 301. There was a decrease in the number of burglaries from 470 in 1881 to 437 in 1882, and the apprehensions increased from 144 to 153; but housebreaking, breaking into shops, &c., increased from 1,392 in 1881 to 1,764 in 1882, while the apprehensions increased from 156 to 170. The number of cases of burglary and housebreaking through doors and windows, &c., left open or insecure show an increase from 842 in 1881 to 1,047 in 1882, while the number of larcenies through doors or windows left open have increased from 2,872 in 1881 to 3,436 in 1882. Larcenies by servants decreased from 2,245 to 2,085, and "other larcenies" increased from 15,259 to 16,247, and the apprehensions from 8,783 to 9,298. The total value of property stolen was 159,288*l.*, an increase of 32,102*l.* over 1881; but the value of property recovered was 63,222*l.*, so that the total loss was only 96,066*l.* in 1882, as against 103,568*l.* in 1881, showing a decrease of 7,502*l.* As many as 12,878 children under ten years of age and 3,961 adults were reported to the police as lost or missing; 7,538 children and 860 adults were found by the police. The remainder returned home or were found by their friends, except 74 adults, who committed suicide. The remaining 124 adults and 12 children have never been traced. Fifty-nine bodies of persons found dead and unknown were photographed, but not identified. The number of fatal accidents in the streets which came under police notice increased from 127 in 1881 to 147 in 1882, and according to the more comprehensive returns of the Registrar-General, from 252 in 1881 to 271 in 1882. The number of persons injured in the streets increased from 3,400 to 3,589. A large proportion of the sufferers are not the foot passengers in the streets, but the persons riding and driving. Proceedings were taken against 1,224 persons for furious riding or driving; 1,114 were convicted and 110 discharged; 405 of these persons so convicted were drivers of hackney carriages. The number of stray dogs in the streets continues to decrease; only 16,721 were seized by the police, 1,933 were claimed, the rest were sent to the Dog's Home or otherwise disposed of. Seventy new lodging-houses were registered, making 1,178 now under control, the same being apportioned to accommodate 27,168 lodgers. In the department relating to public carriages 18,659 deposits were made during the year, and 10,031 articles had been returned to their owners. The articles deposited by cabmen were of a most varied character, amongst them being three bonds for 1,000*l.* each, a plate of silver valued 240*l.*, a diamond worth 500*l.*, and bank notes to the value of 830*l.* Amongst the articles deposited and never claimed by their owners were three 50*l.* notes. In the public carriages department 12,010 new licences were issued, and 1,406 new carriages had been introduced; 22,275 licences had been issued to drivers and conductors during the year.

AN ANALYSIS OF CRIME.—In a separate Report, Mr. Howard Vincent, Director of Criminal Investigation, says:—The year 1882 again shows improvement in very many respects in the character and amount of crime committed within the Metropolitan Police District, and the action of the police as regards it. A comparison of the statistics, which are prepared by an independent service with scrupulous regard to accuracy, with those of foreign cities, shows that the metropolis of London, with a territory nearly 700 square miles in extent, covered by more than 700,000 separate houses and inhabited by a population barely less than 5,000,000, is the safest capital for life and property in the world. There has been an increase of 450 in the number of persons apprehended for criminal offences, and the improvement which has taken place in the preparation of the cases for magisterial and judicial inquiry is illustrated by an increase of 662 in the number of persons summarily convicted, of 166 in the number committed for trial, and of 180 in the number of those convicted and sentenced. The value of property recovered during the twelve months shows an increase of 39,604*l.* This must be attributed in a very large measure to the improved attitude of the 618 pawnbrokers in the metropolis, upwards of 590 of whom have undertaken in writing to conform to a code of seven rules in taking property in pledge. The superintendents have as usual done their utmost to assist me in the discharge of my duties, and the commendation of 224 police officers by judicial authorities affords reliable testimony of the general way in which the criminal law is put into execution. The action of the Criminal Investigation Department has been again particularly successful, and if its establishment in March, 1878, wanted some popularity, it is now the more gratifying to find it spoken well of throughout the service, and receiving frequent proofs of the increased confidence of the public. Six thousand four hundred and ninety-seven persons have been arrested, and 2,940 separate cases inquired into for Government Departments and Continental and provincial police by the 260 detective officers composing it. I de-

voted much labour and attention last year to the improvement of the "Police Gazette," and its reconstitution as a thoroughly efficient organ of intercommunication between the 290 police forces of Great Britain. In these efforts I was cordially assisted by the chief and head constables, and although the matter has been delayed by unavoidable causes, I am happy to say that it will be put into execution in January next. The system of inspecting prisoners under remand, instituted in 1878, has resulted in the identification of 6,889 persons, of whom 1,778 were recognised during the past year as having been previously convicted. This is capable of still further development to the great advantage of public justice in enabling judges and magistrates to take cognizance of the antecedents of the prisoners before them. 1,268 convicts on licence and persons under sentence of police supervision are now in the Metropolitan Police District, and of these I am allowing 97 of the more promising men in actual employ to make their monthly report by letter to the convict office instead of personally. The work done by this branch has proved highly beneficial. It has assisted upwards of 200 men to obtain employment, and is in close connection with the several associations for the assistance of discharged prisoners. For the Royal Society for the Aid of Discharged Prisoners it has made no less than 909 inquiries, and it has likewise done much to assist the active work among discharged prisoners of the St. Giles Mission and of the Sheriffs' Fund Society. The circulars bearing the portraits of notorious criminals at large, which are issued periodically, have been much appreciated by constabulary forces, and the attendance of 235 officers to search the albums of the convict office has succeeded in establishing the identity of 150 prisoners.

THE WRECKS OF 1882.—The Wreck Register issued by the Board of Trade shows that the number of wrecks, casualties, and collisions on the coasts of the United Kingdom for the year 1882 was 3,660, exceeding the total of the previous year by 85, and resulting in the loss of 1,097 lives, the corresponding number for the year 1880-81 being 984. This total of 3,660 wrecks includes all sorts and classes of maritime accidents, viz., wrecks involving total loss, partial loss, collisions, &c. The cases of total loss declined from 705 to 606, and those resulting in loss of life from 238 to 235. The 3,660 disasters involved injury to 4,367 vessels; 686 were collisions and 2,974 were wrecks and casualties other than collisions, 526 of these latter disasters were wrecks, &c., resulting in total loss, 719 were casualties resulting in serious damage, and 1,729 were minor accidents. In the previous year, 1880-81, the wrecks and casualties other than collisions on and near our coasts numbered 2,862, or 112 less than the number reported during the year 1881-82. Out of the 2,974 casualties other than collisions, 2,623 occurred to vessels belonging to this country and its dependencies, and 351 happened to foreign ships. Of these 2,623 British vessels, 1,663 were employed in our own coasting trade, 720 in the (over sea) foreign and home trade, and 240 as fishing vessels. There were eight casualties to ships belonging to foreign countries and states employed in the British coasting trade, and 275 to foreign vessels, which, although not engaged in our coasting trade, were bound to or from British ports; while there were 68 casualties to foreign ships which were not trading to or from the United Kingdom.

WRECKS ON THE BRITISH COAST, 1854-82.—The following is a list of the shipwrecks on our coasts from 1854 to 1881-82;—1854 (last six months), 458; 1855, 1,141; 1856, 1,153; 1857, 1,143; 1858, 1,170; 1859, 1,416; 1860, 1,379; 1861, 1,494; 1862, 1,488; 1863, 1,664; 1864, 1,390; 1865, 1,656; 1866, 1,860; 1867, 2,090; 1868, 1,747; 1869, 2,114; 1870, 1,502; 1871, 1,575; 1872, 1,958; 1873 (first six months), 967; 1873-4, 1,803; 1874-5, 3,590; 1875-6, 3,757; 1876-7, 4,164; 1877-8, 3,641; 1878-9, 3,002; 1879-80, 2,519; 1880-81, 3,575; and 1881-2, 3,360; making a total number of wrecks in 28 years of 57,776.

LOCALITIES OF WRECKS.—Excluding collisions, the localities of the wrecks are thus given:—East coast of England, 809; south coast, 586; west coasts of England and Scotland and east coast of Ireland, 1,046; north coast of Scotland, 99; east coast of Scotland, 161; and other parts, 273. Total, 2,974. The loss of life, collision cases now being included, was as follows:—East coast of England, 289; south coast, 129; west coasts of England and Scotland and east coast of Ireland, 286; north coast of Scotland, 82; east coast of Scotland, 239; other parts of the coast, 72. Total, 1,097. It will thus be seen that the greatest loss of life happened, as usual, on the east coast of England.

CAUSES OF WRECKS.—Excluding collisions, the number of total wrecks on our shores of English ships caused either by the vessels being unseaworthy, or by the officers, pilots, or crews being ignorant or careless, has fallen during the last twelve months, in the first case. from 34 to 20, and in the second case from 92 to 55; while the total losses occasioned by stress of weather have in the same period decreased from 319 to 276, and those arising from unknown causes from 95 to 93. The classified causes of the casualties were as follows:—Through defects, 24; errors, 116; stress of weather, 344; breakdown of machinery and explosions, 65; other causes,

66; and the cases of minor damage were —through defects, 104; errors, 182; breakdown of machinery and explosions, 79: stress of weather, 1,022; and other causes, 177.

AGES AND CLASSES OF WRECKED VESSELS.—Excluding foreign ships and collision cases, 198 disasters happened to nearly new ships, 400 to ships from three to seven years of age, 502 to ships from seven to fourteen years old, and 919 to ships from fifteen to thirty years old. Then follow 437 old ships from thirty to fifty years old. After passing the service of half a century, we come to the very old ships, viz., 40 between fifty and sixty years old, 26 from sixty to seventy, 16 from seventy to eighty, 5 from eighty to ninety, 7 from ninety to one hundred, and three upwards of a hundred years old, while the ages of 70 are unknown. Without reckoning the collisions, 611 steamships and 2,363 sailing vessels were lost or damaged on our coasts last year. Of the 2,623 British ships which met with disaster, still excluding collisions, 1,399 did not exceed 100 tons burthen, 725 were from 100 to 300 tons, 169 were from 300 to 500 tons, and 330 were above 500 tons burthen. Of the 444 British vessels totally lost irrespective of collisions 43 are known to have been built of iron, and of these 36 were steamships, and 7 were sailing vessels.

LOSS OF LIFE.—The wreck abstract again shows a very considerable increase in the number of lives lost during the year. In 1881 the number was 984; in 1882 it rose to 1,097. Of these 319 were lost in vessels that foundered, 77 through vessels in collisions, 302 in ships stranded or cast ashore, and 300 in missing vessels. The remaining 99 lives were lost from various causes, such as through being washed overboard in heavy seas, explosions, &c. Of the 235 ships from which the 1,097 lives were lost, 215 were British, involving the loss of 1,021 lives, and 20 were foreign, causing the loss of 76 lives.

6. EDUCATION, SCIENCE, AND ART.

SCIENCE SCHOOLS.—The following table of statistics gives the number of Science Schools examined from 1873 to 1882, and the number of students who attended those schools. It will be seen that the number examined in 1882 was larger than that examined in 1881, and that the number of students under instruction also showed a corresponding increase:—

	No. of schools.	No. under instruction.		No. of schools.	No. under instruction.
1873	1,182	48,546	1878	1,279	57,230
1874	1,336	53,050	1879	1,355	59,519
1875	1,299	52,669	1880	1,391	60,871
1876	1,426	57,988	1881	1,360	61,177
1877	1,348	55,927	1882	1,403	68,581

In the 1,403 schools examined in 1882, there were 4,881 separate classes, and the number of students for examination from them was 43,331. In addition 7,290 self-taught students and pupils from classes not entitled to claim payments on results presented themselves for examination. The number of papers which passed showed a considerable increase over the corresponding number for 1881. The number of candidates in the honours division of the examination was 1,492, of whom 102 passed in the 1st class, and 425 in the 2nd class. Examinations were held at 1,025 centres in the provinces, and at 92 in the metropolis. The total amount paid to teachers on results was for the year 45,376*l.* 0*s.* 6*d.*, being at the rate of 13*s.* 3*d.* for each student under instruction. Payments were made to 1851 teachers, and the average payment per teacher was 24*l.* 10*s.* 3*d.* The department has made grants in aid of the purchase of apparatus, diagrams, and examples amounting for the year to 1,170*l.* 0*s.* 11*d.* This was an increase on the year 1881, when the total amount was 497*l.* 13*s.* 2*d.* Of the 1,403 schools examined 1,064 were in England and Wales, 155 in Scotland, and 184 in Ireland.

ART SCHOOLS.—The total number of students in the National Art Training School at South Kensington in 1882 was 728, of whom 327 were males and 401 females, being a decrease of 31 on the number in the previous year; and the fees received amounted to 3,247*l.* 3*s.*, the day students paying 2,978*l.* 14*s.*, and the evening students 268*l.* 9*s.*, showing an increase of 180*l.* 14*s.* on last year. New Schools of Art were established during

1882, at Canterbury, Chelsea, Dundee, Hornsey, Huddersfield, Peterborough, Scarborough, Stoke Newington, Tiverton, and Weston-super-Mare, and a branch class at Darlington. The total number of Schools of Art in operation throughout the kingdom was 169, and 13 branch classes. The total number of students in these schools and their branch classes was 33,729, as against 160 schools, 11 branch classes, and 31,592 students in 1881. At the annual examination in April, 1882, 21,291 students submitted 211,748 drawings or models; the corresponding numbers in 1881 having been 19,940 students, and 197,048 works.

SOUTH KENSINGTON MUSEUM.—The number of visitors to the Museum in 1882 shows a decrease of 55,298, the numbers being 1,017,024 for 1881, and 961,726 for 1882. The visitors to the Museum during the 10 years, 1873 to 1882, have numbered 9,415,038, an average of 941,503 per year. The visitors to Bethnal Green Branch Museum during the 10 years 1873 to 1882, have numbered 5,535,868, an average of 553,586 per year.

PROGRESS OF EDUCATION IN GREAT BRITAIN.—The following table exhibits the progress of education in Great Britain in schools under Government inspection from 1864 to 1882, distinguishing England and Wales from Scotland:—

Years ended 31st August.	Number of Schools Inspected.	Number of Children who can be Accommodated.	Average number of Children in Attendance.	Number of Children present at Inspection.
	ENGLAND and WALES (including ISLE OF MAN SCHOOLS from 1868 to 1877; and ROMAN CATHOLIC SCHOOLS in SCOTLAND, from 1868 to 1874).			
1864	6,470	1,332,553	862,817	983,928
1869	8,592	1,838,416	1,153,572	1,448,299
1874	13,084	2,952,479	1,710,806	2,093,180
1876	14,875	3,483,789	2,007,732	2,448,299
1877	15,187	3,653,418	2,150,683	2,633,198
1878	16,293	3,942,337	2,405,197	2,944,127
1879	17,166	4,142,224	2,594,995	3,122,672
1880	17,614	4,240,753	2,750,916	3,268,147
1881	18,062	4,389,633	2,863,535	3,372,990
1882	18,289	4,538,320	3,015,151	3,542,742
	SCOTLAND (exclusive of ROMAN CATHOLIC SCHOOLS, included above). from 1868 to 1874.			
1864	1,421	188,904	148,317	149,363
1869	1,745	237,928	179,214	191,203
1874	2,587	391,592	274,588	314,576
1876	2,912	462,986	332,545	382,224
1877	2,931	535,949	360,413	417,699
1878	2,998	563,481	377,257	439,021
1879	3,003	585,629	385,109	447,801
1880	3,056	602,054	404,618	470,581
1881	3,074	612,483	409,966	475,021
1882	3,073	619,086	421,265	490,372
	TOTAL FOR GREAT BRITAIN.			
1864	7,891	1,521,457	1,011,134	1,133,291
1869	10,337	2,076,344	1,332,786	1,639,502
1874	15,671	3,344,071	1 985,394	2,407,756
1876	17,787	3,946,775	2,340,227	2,830,523
1877	18,118	4,189,367	2,511,096	3,050,897
1878	19,291	4,505,818	2,782,454	3,383,148
1879	20,169	4,727.853	2,980,104	3,570,473
1880	20,670	4,842,807	3,155,534	3,738,728
1881	21,136	5,002,116	3,273,501	3,848,011
1882	21,362	5,157,406	3,436,416	4,033,114

NATIONAL PORTRAIT GALLERY.—The donations received during the year ended June, 1883, include John Britton, the Antiquary; Mary Ann Cross (George Eliot); King George II; Sir William Grant, Master of the Rolls 1801–17; Professor Richard Porson; Sarah Austen; John Flaxman: Anne Flaxman; Oliver Goldsmith; J. R. McCulloch; Lord John Russell; and John Rennie. The purchase by the trustees included Anne Boleyn, the Fourth Earl of Southampton, K.G., a group of military officers, and the Second Marquis of Londonderry, K.G. The total number of visitors during 1882 was 84,599, being 67 in excess of the number of the year 1881. The number on the Bank Holiday, 7th August, 1882, was 2,520, as against 3,037 of the previous August. On Boxing Day, 26th December, 1882, the visitors numbered 1,584, against 1,619 of the year before. The number on Easter Monday, 1883, amounted to 3,981, against 2,851 of the previous year. On Whitsun Monday, 1883, the number of visitors was 5,690, against 2,388 of 1882. The number of visitors to the Gallery from the commencement in Great George Street, Westminster, to the end of last year, and taken year by year, is shown by the following table:—

Year.	Visitors.	Year.	Visitors.	Year.	Visitors.
1859	5,305	1867	24,649	1875	71,740
1860	6,392	1868	25,344	1876§	108,252
1861	10,907	1869†	24,757	1877	79,987
1862*	17,927	1870‡	58,913	1878	72,105
1863	10,475	1871	63,195	1879‖	64,034
1864	14,885	1872	67,039	1880	76,109
1865	16,642	1873	60,047	1881	84,532
1866	24,666	1874	65,201	1882	84,599
		Grand total	1,137,702 visitors.		

* Exhibition year. † Not open at Christmas.
‡ Opened in March at South Kensington.
§ Exhibition of Scientific Instruments, and the Prince of Wales's Indian Presents.
‖ Closed for alterations in the spring months.

SCHOOL BOARDS (RATES AND LOANS).—The following return shows the amounts received by School Boards from rates and loans since 1870:—

Year.	No of School Boards.	Gross Receipt from Rates.	Average rate in the £.	Loans raised in the year.	Balance of loans Outstanding.
		£	d.	£	£.
1871	291	71,185	·5	600	600
1872	424	162,491	·9	65.461	64,525
1873	570	251,907	1·4	929,803	991,252
1874	859	373 859	1·9	1,490,038	2,464,656
1875	1,435	588,845	2·7	1,466,477	3.900,645
1876	1,725	868,884	3·5	1,610,022	5,467,851
1877	1,823	1,108,316	4·2	1,839,772	7,224,788
1878	1,895	1,328,276	4·6	1,535,865	8,696,410
1879	1,967	1,486,251	4·9	1·333,358	9,946,613
1880	2,013	1,579,752	5·1	1,151,166	10,956,355
1881	2,077	1,772,263	5·5	1,046,223	11,864,549
1882	2,115	1,834.756	5·6	1,136,053	12,806,031

Up to the 29th September, 1882 (the close of the year of account for purposes of audit), the number of school boards in England was 1,828, and in Wales 287. The total sum received by 1,798 boards in England who rendered accounts was 4,017,421*l.*, or excluding loans for works of a permanent character 2,962,497*l.*; and in Wales by 278 boards, which sent in accounts 276,134*l.*, or excluding loans 194,506*l.*

ELEMENTARY SCHOOLS IN ENGLAND AND WALES.—The following table shows the rate of progress since the passing of the Education Act of 1870:—

	Years ending 31st August.			
	1870.	1874.	1876.	1882.
I.—Estimated population ..	22,090,163	23,648,609	24,244,010	26,325,376 (April)
II.—Number of schools, day and night (Institutions), inspected	8,281	13,163	14,368	18,407
III.—				
Number of departments—				
1. Day	12,061	17,646	20,782	26,779
2. Night	2,504	1,432	1,474	1,015
Accommodation				
1. Day schools	1,878,584	2,861,319	3,426,318	4,538,320
2. Night schools (not connected with day schools)	..	10,507	14,810	9,992
IV.—Present at examination—				
1. Day scholars	1,434,766	2,034,007	2,412,211	3,542,742
2. Night scholars ..	77,918	36,720	41,133	27,888
Average attendance—				
1. Day scholars	1,152,389	1,678,759	1,984,573	3,015,151
2. Night scholars ..	73,375	48,690	49,858	33,135
V.—Number of teachers—				
Certificated	12,467	18,714	23,053	35,444
Assistant	1,262	2,489	3,173	10,071
Pupil	14,304	27,031	32,231	28,285
Studying in training colleges	2,097	2,982	3,007	3,121
II.—VOLUNTARY SCHOOLS.				
Number of schools	8,281	11,341	12,677	14,421
Number of departments	12 061	16,357	18,057	20,139
Accommodation	1,878,584	2,626,318	2,870,168	3,239,574
Average attendance	1,152,389	1,540,466	1,656,502	2,069,920
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Annual income per scholar from .. 1. School pence	0 8 4¼	0 10 5¾	0 10 6½	0 11 0
Annual income per scholar from .. 2. Voluntary contributions	0 6 11¾	0 7 9	0 8 8½	0 6 10½
Cost .. .. per scholar in average attendance	1 5 5	1 10 10½	1 13 5½	1 14 6½
Grant earned per scholar in average attendance	0 9 9½	0 12 5	0 13 3½	0 15 9
III.—BOARD SCHOOLS.				
Number of schools	826	1,596	3,868	
Number of departments	1,289	2,725	6,640	
Accommodation	245,508	556,150	1,298,746	
Average attendance	138,293	328,071	945,231	
	£ s. d.	£ s. d.	£ s. d.	
Annual income per scholar from .. 1. School pence	0 8 4	0 9 1½	0 9 4	
Annual income per scholar from .. 2. Rates	1 0 8½	1 2 2½	0 17 0	
Cost .. .. per scholar in average attendance	1 15 4½	2 1 4½	2 1 6½	
Grant earned per scholar in average attendance	0 10 10½	0 13 0¾	0 16 2	

AGRICULTURAL TEACHING.—The following return shows the amount of result or other fees paid for agricultural teaching, and the number of prizes given to pupils for proficiency in such subject during the year 1882, in England and Ireland respectively: I.—England: 1. Payments on results of examinations in agriculture, May, 1882: (*a*) To science schools and classes in England, 1,976*l*.; (*b*) To science schools and classes in Ireland, 1,019*l*. 2. Pupils of science schools and classes who obtained Queen's Prizes for agriculture in 1882: (*a*) In England, 262; (*b*) In Ireland, 173. II. Ireland.—Amount of result or other fees for agricultural teaching in Ireland during 1882, 5,601 8*s*. 1*d*.; number of prizes given to pupils for proficiency in agricultural knowledge in Ireland during 1882, 50.

ANNUAL PARLIAMENTARY GRANTS FOR EDUCATION IN ENGLAND FROM 1833 TO 1882.

1833–1838.	£20,000	1865 . .	£693,078
1839–1841.	30,000	1866 . .	694,530
1842–1844.	40,000	1867 . .	705,865
1845 . .	75,000	1868 . .	781,324
1846–1850.	115,000	1869 . .	840,711
1851 . .	150,000	1870 . .	914,721
1852 . .	160,000	1871 . .	1,458,402
1853 . .	260,000	1872 . .	1,551,560
1854 . .	263,000	1873 . .	1,299,803
1855 . .	396,921	1874 . .	1,356,852
1856 . .	451,213	1875 . .	1,548,563
1857 . .	541,233	1876 . .	1,707,055
1858 . .	663,435	1877 . .	1,910,000
1859 . .	836,920	1878 . .	2,149,208
1860 . .	798,167	1879 . .	2,481,168
1861 . .	803,794	1880 . .	2,535,967
1862 . .	842,119	1881 . .	2,683,958
1863 . .	804,002	1882 . .	2,749,863
1864 . .	705,404	1883 . .	2,938,930

ELEMENTARY EDUCATION IN ENGLAND AND WALES.—The Committee of Council on Education (England and Wales) report that in the year ending 31st August, 1882, the inspectors visited 18,289 day schools in England and Wales, to which annual grants were made, containing 26,779 departments under separate teachers, and furnishing accommodation for 4,538,320 scholars. There were on the registers of these schools the names of 4,189,612 children, of whom 1,314,609 were under 7 years of age, 2,670,480 between 7 and 13, 158,956 between 13 and 14, and 45,567 above 14. Of these scholars 3,542,742 were present on the day of the inspector's visit to their respective schools, and 3,015,151 were, on an average, in daily attendance throughout the year: 2,943,114 having made the requisite number of attendances were qualified to bring grants to their schools, 690,660 (being under 7 years of age) without individual examination, and 2,252,454 (above 7), on passing a satisfactory examination in reading, writing, and arithmetic; 661,056 were actually presented for collective and 2,119,374 for individual examination, and while of these last 1,378,175 passed the prescribed test without failure in any one of the three subjects, 89·22 (88·99) scholars out of every 100 examined passed in reading, 81·92 (80·78) in writing, and 77·27 (75·69) in arithmetic. The figures within brackets show the proportion who passed in the previous year. These figures show some improvement upon the returns quoted in our last report. While the increase of the population during the year is estimated at 1·35 per cent., the accommodation has increased by 148,687 school places (or 3·39 per cent.); the scholars on the registers by 144,250 (3·57 per cent.); the average attendance by 151,616 (5·29 per cent.); and the number of children individually examined by 123,676 (or 6·2 per cent.). The local effort which has resulted in this improvement may be measured by the continued support derived from voluntary contributions (724,846*l*. from 270,253 subscribers), and by an advance in the contributions from rates to the maintenance of board schools from 738,737*l*. to 808,121*l*. The school pence have risen from 1.509,653*l*. to 1,585,928*l*. The annual Government grants to elementary day schools rose in the year from 2,247,507*l*. to 2,393,394*l*., or from 15*s*. 8½*d*. to 15*s*. 10½*d*. per scholar in average attendance. The night schools examined during the year were 1,015 in number; 33,135 scholars above 12 years of age were, on an average, in attendance each night; 34,492 scholars were qualified for examination by having made the required number of attendances during the night school session. Of these, 25,370 were actually examined, and out of every 100 scholars so examined, 89·68 passed in reading, 69·07 in writing, and 49·27 in arithmetic.

TRAINING COLLEGES. — The inspectors found 35,444 certificated teachers at work in the aided schools which they visited, while the 41 training colleges, from which the supply of such teachers is mainly recruited, were attended in 1882 by 3.121 students. These students (with a few exceptions), and 2,919 acting teachers, were examined for certificates in December last. At Midsummer, 1882, 5,602 candidates were examined for admission to the 1.641 vacancies declared in the training colleges, of whom 3,600 passed creditably, and 1,602 are now in their first year of residence, along with 1,536 students of the second year.

7. EMIGRATION.

DESTINATION OF EMIGRANTS.—The following table shows the numbers, nationalities, and destinations of passengers leaving the United Kingdom for places out of Europe, in 1882, in vessels under the Passengers Acts; including also passengers for places out of Europe in vessels not under the Acts, as far as the same have been recorded:—

Nationality.	To United States.	To British North America.	To Australasia.	To Cape of Good Hope and Natal.	To all other Places.	Total, 1882.	Total, 1881.
English	94,599	27,763	24,345	10,093	6,192	162,992	139,976
Scotch	19,004	4,630	6,240	1,428	940	32,242	26,826
Irish	68,300	8,048	6,704	542	538	84,132	76,200
Total	181,903	40,441	37,289	12,063	7,670	279,366	243,002
Foreigners ..	112,709	13,034	1,307	1,520	1,459	130,029	144,381
Not distinguished.	927	—	8	31	2,927	3,893	5,131
General Total.	295,539	53,475	38,604	13,614	12,056	413,288	392,514

IMMIGRANTS.—The following table shows the number of persons who arrived in the United Kingdom from places out of Europe, in 1882 and their nationality:—

Nationality.	United States.	British North America.	Australasia.	Cape of Good Hope and Natal.	All other places.	Total for 1882.
British	28,468	6,097	5,824	6,499	3,711	50,599
Foreigners ..	19,493	560	413	888	804	22,158
Not distinguished	5,454	57	—	—	—	5,511
Total.. ..	43,415	6,714	6,237	7,387	4,515	78,268

EMIGRATION AND IMMIGRATION.—The following table shows the balance of emigration, deducting recorded immigration from total recorded emigration from the United Kingdom from 1870 to 1882:—

Year.	Emigration.	Immigration.	Net emigration.
1870..	256,940	49,157	207,783
1871 .	252,435	53,827	198,608
1872..	295,213	70,181	225,032
1873..	310,612	86,416	224,196
1874..	241,014	118,129	122,885
1875..	173,809	94,228	79,581
1876..	138,222	93,557	44,665
1877..	119,971	81,848	38,123
1878..	147,663	77,951	69,712
1879..	217,163	53,973	163,190
1880..	332,294	68,316	263,978
1881..	392,514	77,105	315,409
1882..	413,288	78,268	335,020

EMIGRATION FROM THE UNITED KINGDOM.—The emigration in the year 1882 shows the largest total yet recorded, the actual increase of the year being mainly due to the emigration of persons of British and Irish origin, the foreigners emigrating being less numerous than in 1881:—

Number of emigrants.	Total, including foreigners.	Of British and Irish origin only.
In 1882 ..	413,288	279,366
In 1881 ..	392,514	243,002
Increase ..	20,774	36,364

In this total, the number of emigrants of British and Irish origin only was absolutely the largest in any one year since 1853, when the nationality of emigrants began to be distinguished. In proportion to the population, the emigration is less

important than it was 30 years ago, but the actual numbers are larger than they were then. The character of the emigration has changed, being now much more largely English and Scotch, and less Irish, than it was 30 years ago. It follows from the above figures that the number of foreign emigrants passing through the United Kingdom in 1882 must have diminished, as compared with 1881, by about 15,000. The total increase being 20,774, and the increase of emigrants of British and Irish origin only being 36,364, the difference, which is about 15,000, represents a decrease of foreign emigration.

SEXES AND CONJUGAL CONDITION OF EMIGRANTS.—The following is an account in detail of the number leaving the United Kingdom in 1882 of each sex, and the conjugal conditions of the adults:—

Adults:		
Married	Males	40,091
	Females	46,769
Single	Males	171,785
	Females	72,976
Conjugal condition not stated	Males	2,029
	Females	477
Total		334,127
Children from 1 to 12 years and Infants	Males	42,249
	Females	36 912
Total		79,161
General Total		413,288

OCCUPATION OF EMIGRANTS.—The following is a statement of occupations and general destination of adult passengers of each sex leaving the United Kingdom in 1882, so far as can be ascertained:—

Occupation.	Total.
Adult Males:	
Agricultural Labourers, Gardeners, Carters, &c.	5,512
Bakers, Confectioners, &c.	351
Blacksmiths and Farriers	247
Boot and Shoe Makers	226
Braziers, Tinsmiths, Whitesmiths, &c.	94
Brick and Tile Makers, Potters, &c.	63
Bricklayers, Masons, Plasterers, Slaters, &c.	2,111
Builders	124
Butchers, Poulterers, &c.	209
Cabinetmakers and Upholsterers	120
Carpenters and Joiners	2,013
Clerks and Agents	1,826
Clock and Watch Makers	61
Coachmakers and Trimmers	48
Coopers	105
Domestic Servants	367
Engine Drivers, Stokers, &c.	182
Engineers	584
Farmers and Graziers	6,831
Gentlemen, Professional Men, Merchants, &c.	14,276
Labourers, General	129,419
Lecksmiths, Gunsmiths, &c.	9
Mechanics	10,017
Millers, Maltsters, &c.	82
Millwrights	17
Miners and Quarrymen	3,388
Painters, Paperhangers, Plumbers, and Glaziers	607
Printers	106
Saddlers and Harness Makers	57
Sawyers	37
Seamen	183
Shipwrights	15
Shopkeepers, Shopmen, Warehousemen, &c.	1,207
Smiths, General	395
Spinners and Weavers	411
Tailors	365
Tanners and Curriers	55
Turners	39
Wheelwrights	63
Army and Navy:—Officers	571
" " Men	65
Other Trades and Professions	3,297
Males:—Occupation not stated	28,150
Adult Females:	
Domestic and Farm-Servants, Nurses, &c.	24,060
Gentlewomen and Governesses	159
Milliners, Dressmakers, Needlewomen, &c.	577
Shopwomen	11
Other Trades and Professions	646
Females:—Occupation not stated	94,769
Total	334,127
Children from 1 to 12	79,161
General Total	413,288

IRISH EMIGRANTS.—The number of emigrants who left Irish ports in 1882 was 89,566, an increase of 10,847 as compared with 1881; the number of males being 47,246, or 6,929 more than in the previous year, and of females, 42,320, an increase of 3,918. Of the 89,566 emigrants in 1882, 89,136 were natives of Ireland and 430 were persons belonging to other countries. Of the 89,136 persons natives of Ireland who left in 1882, 16,057, or 12·6 per 1,000 of the population of the province in 1881, were from Leinster; 28,848, or 21·7 per 1,000, from Munster; 26,081, or 15·0 per 1,000, from Ulster; and 18,150, or 22·1 per 1,000, from Connaught; the total number being equal to 17·2 per 1,000 of the population of Ireland in 1881. Comparing 1882 with 1881, Leinster exhibits a decrease of 175, whilst Munster shows an increase of 7,096, Ulster of 1,980, and Connaught of 1,818 persons. The total number of emigrants, natives of Ireland, who left the Irish ports from the 1st of May, 1851 (the date at which the collection of the returns commenced), to the 31st of December, 1882, is 2,804,740—1,493,560 males and 1,311,180 females.

8. THE POST OFFICE.

REVENUE AND EXPENDITURE.—The gross revenue for the year ended 31st March, 1883, was over 9,413,812*l.*, and its increase or decrease on the year ended 31st March, 1882, is shown in the column on the right:—

	£	£	Increase (+) or decrease on 1881-2.
The gross Revenue for the year was over 9,413,812*l.*, arrived at thus:—			£
Postages on letters, post cards, newspapers, &c. ..	..	7,034,982	+264,750
Commission on money orders	217,686		
Commission on postal orders	44,492		
Value of unclaimed money orders	3,800		
	..	265,978	+ 8,610
Savings bank profits	..	344,792	− 3,284
Revenue from telegraphs	..	1,768,060	+113,659
		9,413,812	
The expenditure was:—			
For postal service, including money order and postal order business	3,911,519	..	+262,798
,, packet service	633,879	..	− 3,996
,, savings bank	221,653	..	+ 21,079
,, telegraph service, including expenditure by other departments*	1,585,013	..	+144,284
		6,352,064	
The net revenue was, therefore	..	3,061,748	

being a decrease of 38,727*l.* on the previous year. The increase of expenditure during the year was again large. Much of this increase was due to the development of business, but there were also special items of outlay, for instance, 63,000*l.* for the improvement of the letter carriers' position, 34,000*l.* for the remuneration of Sub-Postmasters, 37,000*l.* for improved telegraphic communication with Ireland, and 13,000*l.* for a cable depôt.

SAVINGS BANK AND INVESTMENTS.—The business of the Savings Bank shows satisfactory progress. The number of Post Office Savings Banks and Money Order Offices was increased by 486, making the total number on the 31st December 6,999. An increase of 82 has taken place up to the 31st March, raising the total to 7,081. The total amount due to depositors, including interest (but exclusive of Government Stock), at the close of the year was 39,037,821*l.*, as compared with 36,194,495*l.* on 31st December, 1881, showing an increase of 2,843,326*l.* This is the largest annual increase since the establishment of the Post Office Savings Banks in 1861. The Post Office Savings Bank Accounts are made up to the 31st December in each year, in accordance with the Act of Parliament, but the amount due to depositors on the 31st of March last was 40,087,000*l.* The deposits (exclusive of those for immediate investment in Government Stock) were 6,110,208 in numbers and 12,227,528*l.* in amount, as compared with 5,676,066, amounting to 11,345,957*l.* in 1881, and the withdrawals (excluding those relating to stock) were 1,918,544 in numbers and 10,094,974*l.* in amount, as compared with 1,712,866, amounting to 9,469,668*l.* in 1881. The amount of interest credited to depositors was 891,629*l.*, as against 826,990*l.* in 1881, showing an increase of 64,639*l.* The greatest number of deposits made on one day was 43,508 on the 9th of January, and the largest amount received in one day was 113,899*l.* on the 2nd of January. The largest number of withdrawals on one day was 18,100, amounting to 61,435*l.*, on the 20th December. The daily average of deposits was 20,235 in number, and 42,175*l.* in amount, and of withdrawals 6,357 in number, and 34,116*l.* in amount. The average amount of each deposit (not including stock investment business) was 2*l.*, the same as in 1881, while the average amount of each withdrawal was less than in the previous year, being 5*l.* 5*s.* 3*d.* as compared with 5*l.* 10*s.* 7*d.* There were

* The annual interest on the capital sum of 10,880,571*l.* raised by the Government for the purchase of the telegraphs, amounting to 326,417*l.*, is not borne on the Post Office votes, but is charged on the Consolidated Fund.

788.858 accounts opened during the year and 537,494 closed, as against 880,831 opened and 458,191 closed in 1881. The number of accounts remaining open at the close of the year was 2,858,976, as against 2,607,612 in the previous year, an increase of 251,364. The accounts were apportioned as follows:—

	Number.	Proportion to population.	Average balance due to each depositor.
			£ s. d.
England and Wales	2,643,785	Or 1 to 10	13 14 10
Scotland	108,701	Or 1 to 35	7 3 9
Ireland	106,490	Or 1 to 48	18 1 7

The Savings Bank business in Ireland again showed a large increase, the number of deposits during the year having been 278,727, amounting to 723,673*l.* as compared with 251,146, amounting to 662,170*l.* in 1881. The total amount, including interest due to depositors at the end of the year, was 1,925,460*l.* as against 1,723,395 in 1881, being an increase of 202,065*l.* This does not include the amount of Government Stock standing to the credit of depositors in Ireland, which is estimated at 125,000*l.* The total amount of Government Stock standing to the credit of depositors at the close of the year was 1,143,717*l.*, held by 16,609 persons, against 738,968*l.*, held by 11,812 persons, in 1881, an increase of 404,749*l.* in the amount and of 4,797 in the number of stockholders. The average of stock held by each person at the end of the year was 68*l.* 17*s.* 3*d.* as compared with 62*l.* 11*s.* 3*d.* in 1881.

POST OFFICES AND LETTER BOXES.—The number of Post Offices has been increased by 488, making a total of 15,406 in the United Kingdom, of which 920 are head offices. 770 letter boxes have been added, making the total number of receptacles of all sorts for letters about 30,100. Additional letter boxes have also been provided at about 300 railway stations throughout the kingdom, including 50 at railway stations in London, which, it is believed, will prove a great convenience to the public. New Post Office buildings have been provided and brought into use at Barnsley, Godalming, Hartlepool, Hereford, Kelso, and Wednesbury; and satisfactory progress is being made with the new Post Office at Manchester. New offices are also in progress at other towns, and many existing offices are being considerably enlarged. Lighting by electricity has been introduced into the Glasgow Post Office, and very successful experimental trials have been made in the London Central Telegraph Office. The extension of this new mode of illumination is under consideration.

THE WORK OF 1882-3.—The estimated number of letters delivered in the United Kingdom during the twelve months ended 31st March, 1883, was 1,280,636,200, showing an increase of 4·2 per cent.; the number of post cards, 144,016,200, an increase of 6·4 per cent.; the number of book packets and circulars 288,206,400, an increase of 6·3 per cent.; and the number of newspapers, 140,682,600, being slightly less than last year. The decrease in newspapers may be attributable to the increased facilities offered by Railway Companies for sending newspapers as parcels. The number of registered letters was 11,264,926, being an increase of 3·3 per cent. The following table shows the total number of letters delivered through the post in the United Kingdom at the undermentioned periods, and the average per head to the population:—

Year.	Population of United Kingdom.	No. of letters per individual.
1839 .. .. .. (Before the introduction of penny postage.)	26,200,106	3
1840 .. .. .. (After such introduction.)	26,487,026	7
1872	31,555,164	28
1881-2..	34,929,679	35
1882-3..	35,289,950	36

It is estimated that the average number of letters per head of the population in 1882-3 was as follows:—

In England and Wales ..	40
Scotland	30
Ireland	16
United Kingdom ..	36

Taking the latest returns available with respect to foreign countries (viz., those of 1881) the average number per head was—

In the United States ..	21
France	15
Germany	13
Italy	6
Spain	5

RETURNED LETTERS.—The number of letters received in the returned letter offices was 5,651,443, an increase of 196,558; of post cards, 596,614, an increase of 37,205; of book packets, 4,988,990, an increase of 287,596; and of newspapers, 477,978, an increase of 63,184. The increase in returned letters is about proportionate to the increase in correspondence. Of the letters 562,291 were unreturnable; 26,293 bore no address, and of this number 1,604 contained cash and cheques, &c., amounting to 6,016*l*., the whole of which with the exception of about 150*l*. has already been returned to the senders. The total number of letters and packets containing value, showed an increase of 12,000. Notwithstanding repeated warnings to the public, nearly 30,000 articles were received loose and coverless, owing to the weak and flimsy nature of the wrappers used and the insecure mode of packing.

STAFF EMPLOYED.—The increase in the number of established officers in 1882 was 1,495, making the total number of persons employed by the Department on the 31st of December about 44,600, in addition to about 41,000 persons who do not hold permanent situations. The number of women employed was:—As clerks (in the central establishments in London, Edinburgh, and Dublin), 455; as telegraphists, counter-women, &c., 2,106. The non effective list of the whole staff showed a total of 3,335 pensioners, costing about 176,826*l*.

POST CARDS.—The following table shows the estimated number of post cards delivered in England and Wales and in the United Kingdom in each year from 1873 to the present time, and the increase per cent. per annum:—

Year.	England and Wales.	United Kingdom.	
	Number.	Number.	Increase per cent. per annum.
1873	60,000,000	72,000,000	—
1874	66,000,000	79,000,000	9·7
1875	73,369,100	87,116,300	10·7
1876	78,412,100	92,935,700	6·7
1877–8	86,051,500	102,237,300	10·
1878–9	94,471,500	111,445,700	9·
1879–80	96,637,400	114,458,400	2·7
1880–81	103,473,100	122,884,000	7·4
1881–82	114,251,500	135,329,000	10·1
1882–83	121,243,300	144,016,000	6·4

Under authority of the Act passed in 1882 reply post cards, both inland and foreign, have been introduced, but hitherto the Postmaster-General states the public have not availed themselves to any great extent of the facility thus offered.

NEWSPAPERS.—The following table shows the estimated number of newspapers delivered in England and Wales and the United Kingdom in each year from 1873 to the present time, and the increase per cent. per annum:—

Year.	England and Wales.	United Kingdom.	
	Number.	Number.	Increase per cent. per annum.
1873	89,115,200	113,016,500	3·6
1874	91,230,400	117,032,900	3·5
1875	93,345,600	121,049,400	3·4
1876	95,460,800	125,065,900	3·3
1877–8	98,232,400	128,558,000	2·7
1878–9	100,424,300	130,895,300	1·8
1879–80	100,317,000	130,518,400	—
1880–81	102,764,600	133,796,100	2·5
1881–82	108,651,700	140,789,100	5·2
1882–83	108,613,500	140,602,600	—

BOOK PACKETS AND CIRCULARS.—The following table shows the estimated number of book packets and circulars delivered in the United Kingdom in each year from 1872 to the present time, and the increase per cent. per annum:—

Year.	England and Wales.	United Kingdom.	
	Number.	Number.	Increase per cent. per annum.
1873	104,000,000	129,000,000	13·1
1874	115,769,600	141,967,100	10·0
1875	133,394,900	158,666,600	11·7
1876	146,405,300	173,724,900	9·4
1877–78	157,691,600	189,300,600	8·9
1878–79	164,789,400	197,076,500	4·1
1879–80	180,541,400	213,963,000	8·6
1880–81	204,003,400	240,356,200	12·3
1881–82	228,999,400	271,038,700	12·8
1882–83	244,713,800	288,206,400	6·3

CHRISTMAS WORK.—The extra number of letters and packets dealt with in the Central Office during the Christmas week was nearly 14,000,000, including 3 tons of registered letters, against 12½ millions and 4½ tons of registered letters in the previous

year. The decrease in registered letters was probably due to the extended use of postal orders for the transmission of small sums.

TELEPHONIC COMMUNICATION.—The Postmaster-General in his report for 1881–2 expressed his opinion as to the undesirability of creating a monopoly in the matter of telephonic communication, and announced that in future applications would be favourably entertained by him from responsible persons for licences to establish exchanges under conditions giving adequate protection to the public and to the Department. In his report for 1882–3, he states that additional telephone exchanges have been established by the Post Office at Newcastle-on-Tyne, Exeter, Falmouth, Middlesborough, Plymouth, West Hartlepool, Cork, Limerick, Londonderry, and Waterford. The exchange at Newcastle, to which there are upwards of 200 subscribers, has connecting lines to Sunderland, South Shields, Tyne Dock, North Shields, &c., and is being worked with great success. The nine companies to whom licences have been granted for the establishment of telephone exchanges have now 47 exchanges in operation, viz., 37 in England, 8 in Scotland, and 2 in Ireland.

TELEGRAPH DEPARTMENT.—One hundred and two additional Post Offices and 45 railway station offices were opened for telegraph work, making the total number 5,742. The number of telegraph messages sent was 32,092,026, being an increase of 746,165 only as compared with 1881–2. Deducting about 6,000,000 for Government and Press messages, it appears that the average is about three messages a-year for each four persons. The proportion of telegrams to letters is as 1 to 44. The number of messages sent in London was 12,374,707 against 12,071,034 in 1881–2, being an increase of 303,673. As soon as the necessary increase of plant can be effected, the minimum charge for inland telegrams will be reduced from 1*s.* to 6*d.*

9. MISCELLANEOUS.

RAILWAY PROGRESS IN ENGLAND AND WALES.—The following table shows the total length, capital, passengers conveyed, receipts, and working expenses of railways in England and Wales from 1869 to 1882:—

Years.	Length of lines open at the end of each year.	Total capital paid up (shares, loans, &c.) at the end of each year.	Total No. of passengers conveyed (excluding season-ticket holders).	Total of traffic receipts.	Total of working expenses.	Net traffic receipts of passengers and goods.
	England and Wales.					
	Miles.	£	No.	£	£	£
1869 ..	10,773	430,772,858	274,707,152	34,698,985	17,504,308	18.600,814
1870 ..	11,043	440,169,455	295,173,920	36,691,138	18,227,739	19,894,422
1871 ..	10,850	461,368,616	328,552,946	39,842,394	19,387,483	21,995,582
1872 ..	11,136	473,639,591	372,450,223	43,376,178	22,065,151	22,989,668
1873 ..	11,369	490.018,994	401,465,086	47,061,989	25,813,377	23,043,901
1874 ..	11,622	508,726,428	423,083,941	48,142,442	27,534,723	22,675,413
1875 ..	11,789	527,090,667	451,032,641	49,771,919	28,220,495	23,505,921
1876 ..	11,989	544,831,959	477,146,165	50,504,152	28,466,366	24,009,953
1877 ..	12,098	557,878,925	490,351,707	51,063,421	28,635,033	24,422,466
1878 ..	12,229	579,387,630	503,982,893	51,069,770	28,099,438	25,043,437
1879 ..	12,547	593,155,665	503,652,787	50,437,796	27,112,853	25,366,526
1880 ..	12,656	602,242,578	540,669,175	53,598,987	28,577,111	27,218,075
1881 ..	12,807	616,437,449	561,224,291	54,924,812	29,685,896	27,554,236
1882 ..	13,000	635,186,000	586,689,000	56,611,000	30,928,000	28,178,000

CIVIL LIST PENSIONS.—A list of all pensions granted during the year ended 20th June, 1883, and charged upon the Civil List. (Presented pursuant to Act 1 Vict. c. 2, s. 6.)—Mr. Samuel Rawson Gardiner, 150*l.*, in recognition of his valuable contributions to the history of England; Mrs. Emma Robinson, 80*l.*, in

recognition of the services of her husband, the late Canon Robinson, in the cause of public education; Mr. John Hullah, 150*l.*, in recognition of his great services in the advancement of musical education in this country; Mr. David Wingate, 50*l.*, in consideration of his merit as a poet, and of his narrow means of subsistence; Mrs. Alma Haas, 80*l.*, in recognition of the position of her late husband, Dr. Haas, as an Oriental scholar, and of his important services in the British Museum; Mrs. Auguste Margherita Elizabeth Palmer, 200*l.*, in recognition of the services of her late husband, Professor Palmer, and in view of all the circumstances of the case; His Imperial Highness Prince Lucien Louis Bonaparte, 250*l.*, in consideration of his services to literature and learning; Anna Maria, Lady Palliser, 150*l.*, in recognition of the valuable services of her late husband, Sir William Palliser, in the improvement of the manufacture of projectiles and rifled ordnance; Mrs. Harriette Scott Russell, 90*l.*, in consideration of the high position held by her late husband as a naval architect; total, 1,200*l.*

National Gallery.—The trustees of the National Gallery, (Willian Russell, Esq.; the Right Hon. Sir Austen H. Layard. G.C.B.; the Right Hon. Sir William H. Gregory. K.C.M.G.; Sir Walter C. James, Bart.; Viscount Hardinge; the Earl of Dudley; George Howard, Esq., M.P.), in their report dated 3 March, 1883, state that 22 pictures were purchased in 1882 out of the fund granted by Government, The purchases included:—"The Spiritual Form of Pitt guiding Behemoth," by William Blake; "Wherries on the Yar," by John Cotman; "The Five Senses," by Gonzales Coques; and portrait of Philip IV of Spain by Velasquez (purchased for 6,300*l.* at the Hamilton sale from the Clarke bequest). As nearly as can be calculated, the National Gallery was visited by 895,836 persons on the public days during the year 1882, showing a daily average attendance on such days (206 in number) of 4,348. These numbers must, however, be only regarded as approximate, no accurate means of checking them being in use. On students' days (Thursdays and Fridays), when the number of visitors entering by payment is registered by a turnstile, 34,260 persons were admitted between the 1st of January and the 31st December, 1882; the admission fees (at 6*d.* each) amounting to 856*l.* 10*s.* as compared with 719*l.* 10*s.* 6*d.* received in 1881. The amount annually realised by admission fees is paid into Her Majesty's Exchequer under the head of "extra receipts." The total number of students attending the Gallery on Thursdays and Fridays throughout the year 1882 was 20,750. Independently of partial studies, 643 oil-colour copies of pictures have been made, viz., 392 from the works of 65 old masters, and 251 from the works of 38 modern painters.

Work of the Session.—The additions made to the Statute-book in the year 1882 are the fewest in modern times. Her Majesty's assent was given to only 62 Bills, as against 82 last year, 72 in 1881, and 67 in the broken session of 1880. Nor is the balance redressed when we turn to private legislation. The session of 1882 produced 266 local Acts, that just closed but 232. The longest statute in our newest legislative tome is the Bankruptcy Act, occupying 61 pages; and the next longest the Corrupt Practices Act, 43 pages; the shortest, the enactments conferring grants upon Lords Wolseley and Alcester, for the operative parts of which but five lines are required.

Building Societies.—A return relating to building societies in England shows that there are 1,687 societies in existence, with a membership of 493,271; the total receipts during the last financial year amounted to 20,919,473*l.* There were 1,528 societies making a return of liabilities, which were, to the holders of shares 25,351,611*l.*, and to depositors 16,351,611*l.* There was a balance of unappropriated profit to the extent of 1,567,942*l.* The assets came to 44,587,718*l.* In Scotland there were 5,386 members of building societies. The receipts were 413,609*l.*; the liabilities to holders of shares amounted to 674,990*l.*; to depositors and other creditors, 268,511*l.* The assets consisted of balance due on mortgage securities, 987,987*l.*; and amount invested in other securities and cash, 67,618*l.* In Ireland there were 9,714 members of building societies. The receipts were 778,889*l.*; liabilities to the holders of shares, 684,396*l.*; to depositors and others, 432,056*l.* The assets included balance due on mortgage securities, 1,051,423*l.*; and amount invested in other securities, 79,802*l.*

National Art Library.—The number of books in the National Art Library at South Kensington is now as follows:—1. Books on art, 57,877; 2. Original drawings, 22,023; 3. Prints, engravings of ornament, &c., 81,534; 4. Photographs, 58,150. Total, 219,594. The number of readers during the past 10 years has been 241,261, showing an average of 24,126 for each year.

CHRONICLE OF EVENTS AND OCCURRENCES.

Home and Foreign.

From November, 1882, to November, 1883.

1882.

Nov. 10. Division in the House of Commons on the first Clôture resolution, 304 voting for it, and 260 against, giving the Government a majority of 44.

11. Attempt to assassinate Mr. Justice Lawson in Dublin.

16. Meeting at the Marquis of Salisbury's to promote a memorial to Dr. Pusey; resolved to establish a Pusey Library at Oxford, and to purchase the doctor's library as a nucleus, also to provide an endowment for librarians.

18. Review by the Queen in St. James's Park of troops returned from Egypt.

21. The Queen distributed medals to the troops returned from Egypt.

25. Assassination of a detective police officer in Dublin.

27. Attempted assassination of Mr. D. J. Field, a Dublin citizen, while returning home from business.

28. The Privy Council at Dublin resolved to "proclaim" the city under the 11th or Curfew Clause of the Crimes Prevention Act.

Dec. 1. First meeting of the new School Board for London; Mr. Buxton re-elected Chairman, and Mr. Freeman Vice-Chairman.

2. Parliament prorogued.

4. Opening of the Royal Courts of Justice by the Queen.

6. Transit of Venus.

7. Alhambra Theatre, London, burnt to the ground.

8. Great fire in Wood Street, Cheapside.

11. Great fire at Kingston, Jamaica, 7,000 persons rendered homeless.

12. Prince of Wales opened the new building for the City of London School on the Thames Embankment.

13. Celebration of Mr. Gladstone's political jubilee.

16. Fire at Hampton Court Palace.

26. Announcement of the nomination to the Archbishopric of Canterbury of Dr. Edward White Benson, Bishop of Truro.

28. Fall of a chimney at Newland's Mill, Bradford, resulting in 54 deaths.

1883.

Jan. 3. Patrick Delaney sentenced to 10 years' penal servitude for having attempted to murder Mr. Justice Lawson in Dublin.

7. Collision in the Mersey between the "Kirby Hall" and the Inman steamer "City of Brussels," the latter vessel being sunk and 10 lives lost.

13. Memorial to Prince Louis Napoleon at Woolwich unveiled by the Prince of Wales.

16. Manifesto from Prince Napoleon to the citizens of France published in the "Figaro"; arrest of the Prince by order of the Government.

19. Collision between the steamship "Cimbria" just after leaving the Elbe for New York and the steamer "Sultan" on her way from Hull, upwards of 400 drowned.

Jan. 19. Prince Krapotkine, a Russian refugee, and 45 anarchists sentenced to five years' penal servitude and other punishments after a long trial at Lyons.

24. Directors of Bank of England reduced the rate of discount from 5 per cent., at which it had stood since September 14, 1882, to 4 per cent.

25. Celebration of the Silver Wedding of the Crown Prince and Princess of Germany.

28. Resignation of M. Duclerc and the French Ministry; M. Jules Ferry declined to form a Cabinet, and M. Fallières called upon to do so.

29. Election of Dr. Benson, Bishop of Truro, as Archbishop of Canterbury, by the Dean and Chapter.

Feb. 8. Budget for the year presented by the London School Board, requiring a rate of 7*d.* in the pound.

9. Release of Prince Napoleon.

12. French Senate adopted an amendment on the Bill for the exclusion of the Princes, providing for their expulsion only on proof of their acting as Pretenders.

13. Resignation of the Ministry of M. de Fallières.

15. Parliament opened by Commission.

—. Bank rate reduced to 3½ per cent.

10. Mr. A. Balfour's amendment to the vote on the Address, expressing regret that the war in Egypt had not been avoided, rejected by 179 to 144.

17. James Carey, Town Councillor of Dublin, one of the prisoners charged with complicity in the murder of Lord Frederick Cavendish and Mr. Burke, turned informer, and appeared in Court as a witness, giving a full account of the planning and execution of the crime.

22. Speech of Mr. Forster in the House of Commons on the Irish question, calling upon the Home Rule Members to clear themselves of suspicion of complicity with the assassination schemes.

23. Mr. Gorst's amendment to the Address, expressing a hope that the present policy of the Executive at Dublin will be maintained, rejected by 259 to 176.

25. Birth of a daughter to the Duchess of Albany (Alice Mary Victoria Augusta Pauline).

26. Mr. Parnell's amendment to the Address condemning the administration of the Crimes Act, and bringing serious charges against the Irish Executive, rejected by 135 to 15.

Mar. 1. Bank rate reduced to 3 per cent.

-. Sir Arthur Otway, Bart., succeeded Dr. Lyon Playfair as Chairman of Committees in the House of Commons.

4. Foote, the editor of the "Freethinker," Ramsey, the printer, and Kemp, the publisher, sentenced respectively to one year, nine months, and three months' imprisonment with hard labour, for publishing blasphemous pictures and letter-press in the Christmas number of the paper.

7. The "Navarre" steamship, of Leith, sunk on voyage from Christiansand to Leith, having been disabled in gale of 5th of March; from 60 to 70 drowned.

2. The Most Rev. Dr. Benson took the oaths and inscribed the roll of the House of Lords as Archbishop of Canterbury.

13. Bill to prevent payment of wages in public-houses passed through Committee in Lords.

14. Great Eastern Railway Company's Bill to carry a railway

through a part of Epping Forest thrown out by the House of Lords by 230 to 82.

Mar. 15. Explosion of dynamite at the office of the Local Government Board, Whitehall.

—. University boat race won by Oxford by four lengths.

21. Sir Robert Phillimore retired from the Bench after serving as a Judge for sixteen years.

28. Mr. Justice Lawson sentenced twelve prisoners for conspiring to overthrow the Queen's Government in Ireland, ten to twelve years' penal servitude, one to seven years, one to five.

29. Archbishop Benson enthroned in Canterbury Cathedral.

April 5. Mr. Childers made his financial statement as Chancellor of the Exchequer.

-. Arrest of Dr. Thomas Gallagher and others in London with dynamite in their possession, and discovery of a manufactory of dynamite at Birmingham.

8. Explosive Substances Bill introduced and passed in both Houses of Parliament.

-. Judgment given in the House of Lords in the case of Clarke v. Bradlaugh. Mr. Bradlaugh appealed from the decision of the Court of Appeal, which held that Mr. Clarke's action as a common informer to recover a penalty from Mr. Bradlaugh for sitting and voting in Parliament without taking the oath was maintainable. The Lord Chancellor and Lords Watson and Fitzgerald reversed the decision on the ground that the Crown only could recover the penalty; Lord Blackburn dissented.

9. Opening of the trial of the men charged with the Phœnix Park murders.

10. Archbishop Benson presided over the meeting of the Canterbury Convocation for the first time, in succession to Archbishop Tait.

13. Joseph Brady convicted at Dublin of the murder of Mr. Burke in Phœnix Park.

16. Motion for a pension of 2,000*l.* per annum each to Lords Alcester and Wolseley and their next heirs male carried in the Lords *nem. con.*

17. Mr. Pell's motion, demanding a speedy and effectual remedy for "the severe and inequitable pressure of local taxes," debated in the House of Commons, and lost by 12 votes; the majority in favour of Mr. Albert Grey's amendment recognizing the necessity of relief, but declaring that it should be combined with a reform of local government.

19. Statue of Lord Beaconsfield erected as a national memorial unveiled in Parliament Square by Sir Stafford Northcote.

—. Bill for the annuity to Lord Alcester read a second time in Commons by 217 to 85 votes; and the Bill for Lord Wolseley's annuity by 178 to 55.

20. Mr. Stansfeld's motion, condemning the compulsory examination of women under the Contagious Diseases Acts, carried in the Commons by 182 to 110.

24. Second Reading of the Affirmation Bill moved in the House of Commons.

27. Sir Wilfrid Lawson's Local Option Resolution carried in the Commons by 230 to 143.

May 1. International Exhibition opened at Amsterdam.

2. Delaney and Caffrey charged with complicity in the Phœnix Park murders, pleaded guilty, and were sentenced to death.

May 3. The Prince of Wales laid the memorial stone of the Indian Institute at Oxford.

4. Second Reading of the Affirmation Bill rejected by 292 to 289, leaving the Government in a minority of 3. At a subsequent sitting the House, by 271 to 165, re-affirmed its resolution to prevent Mr. Bradlaugh from going through the form of taking the oath, Mr. Bradlaugh being in the meantime heard at the Bar of the House. The Government, with the minority of 165, voted for the previous question, which would, if carried, have left Mr. Bradlaugh at liberty to present himself to be sworn.

—. Lord Dufferin left Egypt on the completion of his visit to that country for the purpose of suggesting a scheme for its government.

7. The Prince of Wales opened the Royal College of Music.

8. The House of Lords, by 91 to 67, rejected Lord Dunraven's resolution in favour of the Sunday opening of all national museums and galleries.

9. Kelly tried a third time for the murder of Mr. Burke, and sentenced to death.

10. Opening of the New Central Fish Market, erected by the Corporation of London in Farringdon Road.

—. Meeting of British shipowners at Cannon Street Hotel to promote a second Suez Canal.

—. Bank rate raised from 3 per cent. to 4 per cent.

14. Opening of the International Fisheries Exhibition at South Kensington by the Prince of Wales.

—. Joe Brady executed at Kilmainham Gaol for the murder of Lord F. Cavendish and Mr. Burke.

19. Coulsdon Common, Caterham, Surrey, dedicated to public use for all time by Mr. Shaw-Lefevre, M.P., having been acquired by the Corporation of London.

22. State entry of the Czar into Moscow.

—. The honour of knighthood conferred by the Queen on Dr. George Grove, Professor G. A. Macfarren, and Dr. Arthur Sullivan.

23. Reopening of St. Giles's Cathedral, Edinburgh, after restoration at the expense of the late Dr. William Chambers, the work having occupied nearly twelve years.

27. Coronation of the Emperor and Empress of Russia at Moscow.

June 10. Hospital Sunday in London.

11. Deceased Wife's Sister Marriage Bill read a second time in the House of Lords by 165 to 158.

13. Testimonial presented to the Right Hon. John Bright, M.P., on celebration of the completion of his twenty-fifth year in the representation of Birmingham.

—. Tamatave (Madagascar) taken by the French under Admiral Pierre.

—. Dr. Gallagher, Whitehead, Wilson, and Curtin sentenced at the Old Bailey to penal servitude for life for the dynamite conspiracy.

16. Upwards of 200 children crushed to death or suffocated in leaving the Victoria Hall, Sunderland, after an entertainment, owing to a block on the stairs caused by the closing of the doors.

17. Queen's Prize at the Wimbledon Volunteer Rifle Meeting won by Sergeant Mackay, of 1st Sutherlandshire Regiment, with 79 points.

June 18. The Ninth Triennial Handel Festival commenced at the Crystal Palace. Mr. Manns conducting.
19. The Deceased Wife's Sister Bill passed through Committee in the House of Lords.
22. The "Waitara," a vessel belonging to the New Zealand Shipping Company, sunk after a collision with the "Hurunui" in the Channel; twenty-five lives lost.
28. The Deceased Wife's Sister Bill rejected in the House of Lords on the motion for its third reading by 145 to 140.

July 4. Banquet to Mr. Henry Irving prior to his departure for America, Lord Chief Justice Coleridge presiding.
5. Burial of the late Mr. W. Spottiswoode, President of the Roya Society, in Westminster Abbey.
21. Lord Penzance pronounced a sentence of deprivation agains the Rev. A. Mackonochie.
23. M. Waddington arrived in London as Ambassador from the French Republic.
29. James Carey, the informer in the Phœnix Park assassination cases, shot by O'Donnell on board the ship "Melrose," when about to land at Port Elizabeth.
30. Sunday Closing Bill for Cornwall rejected in the House of Lords by the casting vote of the Lord Chancellor, 38 Peers voting for and 38 against the motion for the third reading.

Aug. 1. The Inland Parcels' Post came into operation.
5. Military revolution at Badajos, two regiments mutinying and proclaiming a Republic.
7. A private lunatic asylum at Southall Park destroyed by fire, the proprietor, Dr. Boyd, his son, and three other persons being burned to death.
15. Cetewayo's supporters defeated Usebepu in Zululand.
17. The House of Lords, by 30 to 17, rejected the Bill to abolish cruelties in connection with pigeon-shooting.
19. The funicular railway which ascends the Vaudois Righi opened to the public.
25. Hué bombarded and captured by the French.
—. Parliament prorogued by Royal Commission.
26. Monument to Daguerre, the inventor of photography, unveiled at Cormeilles-en-Paris, his birthplace.
—. Mr. Mundella introduced the Educational Estimates, the vote for the year being 2,938,930*l*.
27. Great volcanic eruption in Java.
28. Earthquake at Casamicciola, in Ischia; nearly 4,000 lives lost.

Sept. 2. The Twenty-third Church Congress assembled at Reading, the Bishop of Oxford presiding.
13. Bank rate reduced from 4 per cent., at which it was fixed on 10th May, to 3½ per cent.
19. Meeting of the British Association at Southport, Lancashire.
21. Explosion of rockets at Woolwich Arsenal.
24. Mr. Shaw, the missionary recently imprisoned by the French at Madagascar, arrived in England.
27. Bank Rate reduced from 3½ to 3 per cent.
28. National monument in the Niederwald to commemorate the establishment of the German Empire unveiled by the Emperor William.
—. Election of Mr. Cowan and Mr. Clarence Smith as Sheriffs of London and Middlesex.
—. Bartholomew Binns, platelayer, of Dewsbury, selected by the Sheriffs of London and Middlesex to succeed Marwood as hangman.

Sept. 29. The King of Spain hooted in the streets of Paris on the occasion of a public reception accorded to him by the President and the Government.

— The Court of Aldermen of the City of London elected Mr. Alderman Fowler, M.P., to the office of Lord Mayor, refusing to accept Mr. Alderman Hadley, the nominee of the livery.

30. President Grévy called on King Alfonso to apologise for the insult offered to him in Paris on the previous day.

Oct. 1. King Alfonso left Paris for Madrid.

2. Ministerial crisis in Paris arising out of the matter of the hostile demonstration to the King of Spain.

–. Announcement of General Sherman's retirement from the command of the United States' army.

3. Destruction by fire of the Pittsburg Exhibition buildings, Pennsylvania, with loss estimated at 200,000*l*.

–. Social Science Congress opened at Huddersfield.

–. Miners' Conference at Birmingham, 172,000 delegates present.

–. Dedication of Burnham Beeches to the public use by the Duke of Buckingham in the presence of the Lord Mayor of London.

4. First National Apple Congress opened at Chiswick; 10,000 different varieties of apples shown.

–. Mr. W. Houldsworth elected for Manchester in the room of the late Mr. Birley by 18,188 votes against 6,216 recorded for Dr. Pankhurst, the Radical candidate.

5. General Thibaudin, the French Minister of War resigned at the request of President Grévy.

18. The Emperor of Russia laid the first stone of the Memorial Church of the Resurrection to be erected over the spot where Alexander II was assassinated.

24. Sir Moses Montefiore entered on his hundredth year.

—. Opening of the University of South Wales at Cardiff.

30. Explosion at two points on the Metropolitan Railway near Charing Cross and Praed Street stations.

31. Close of the Fisheries Exhibition at South Kensington by the Prince of Wales.

—. The French Ministry obtained a vote of confidence by a large majority in reference to their policy on the Tonquin question.

Nov. 2. The Duke and Duchess of Connaught left London for India, his Royal Highness going out to take command of the Meerut Division.

3. Sir Stafford Northcote elected Lord Rector of Edinburgh University.

–. Great fire at Haggerston.

5. The Princess Louise and the Marquis of Lorne arrived in England on completion of His Excellency's vice-royalty in Canada.

9. The Right Hon. R. N. Fowler, M.P., entered on his office as Lord Mayor of London.

10. Four hundredth anniversary of the birth of Martin Luther; special services and other celebrations in Germany and England.

14. The old Scottish Regimental Colours publicly deposited in St. Giles's Cathedral, Edinburgh, by the Duke of Cambridge.

NECROLOGICAL TABLE.

OF DISTINGUISHED AND NOTABLE PERSONS WHO DIED BETWEEN NOVEMBER, 1882, AND NOVEMBER, 1883.

1882.		Age
Nov.	10. STEPHENS, Edward Bowring, A.R.A., sculptor; at 110, Buckingham Palace Road	66
	11. ROSE, George (Arthur Sketchley), author and entertainer, formerly a clergyman of the Church of England; at Gloucester Place	65
	13. BUCHANAN, Right Hon. Sir Andrew, G.C.B., late Ambassador to the Courts of Prussia, Russia, and Austria; at Milngavie, N.B.	74
	18. ENGEL, Carl, musician and author; (suicide) at 54, Addison Road, Kensington	64
	—. HAWKINS, Rev. Edward, D.D., Provost of Oriel College, Oxford, and Canon of Rochester; at Rochester	93
	19. HARROWBY, Earl of, K.G., Chancellor of Duchy of Lancaster, 1854, and Lord Privy Seal, 1855–57, M.P. for Tiverton, 1819-31, and Liverpool, 1831-47; at Sandon Hall	84
	—. RANDALL, Ven. James, formerly Archdeacon of Berks; at Binfield, Staffordshire	92
	23. WALTON, Sir William Henry, formerly Queen's Remembrancer and Senior Master of Court of Exchequer; at Surbiton	83
	24. HUTT, Right Hon. Sir William, K.C.B., V.P. of Board of Trade, and Paymaster-General under Lord Palmerston's administration; at Ryde, I.W.	79
Dec.	2. CHETWYND, George, C.B., Receiver and Accountant-General of the Post Office; at Blackheath	58
	3. TAIT, Right Hon. and Most Rev. Archibald Campbell, Archbishop of Canterbury; at Addington, Surrey	71
	—. CHALLIS, Rev. James, M.A., F.R.S., F.R.A.S., Plumian Professor of Astronomy; at Cambridge	78
	6. BLANC, Louis, journalist, author, socialist, at Cannes	68
	—. TROLLOPE, Anthony, novelist; at 43, Welbeck Street	67
	9. NAPIER, Right Hon. Sir Joseph, Bart., ex-Lord Chancellor of Ireland; at St. Leonards	77
	11. WATSON, Sir Thomas, M.D., F.R.S., physician; at Reigate.	89
	—. GALIGNANI, William, last member of family of proprietors of "Galignani's Messenger"; at Paris	87
	16. OLLIVANT, Right Rev. Alfred, D.D., Bishop of Llandaff, 1849–82; at Llandaff	84
	17. CLOSE, Ven. Rev. Francis, D.D., Dean of Carlisle, 1856-81; at Penzance	85
	31. GAMBETTA, Léon Michel, ex-President of the Chamber of Deputies, and Prime Minister; at Paris	45

1883.		Age
Jan.	4. CHANZY, Antoine Eugene Alfred, General, Commander of the Western Army of National Defence in France in 1870; at Paris	59
	9. MARTIN, Right Hon. Sir Samuel, Baron of the Court of Exchequer, 1850-74; at 132 Piccadilly	81
	12. CROWDY, John, editor of the "Artist," a contributor to the "Companion to the Almanac"; at Addlestone	48
	19. ENGLAND, Sir Richard, K.C.B., General, served at the attack at Flushing, 1809; at Titchfield	89
	21. PRINCE CHARLES of Prussia, only surviving brother of the Emperor of Germany; at Berlin	81
	23 DORÉ, Paul Gustave, artist; at Paris	51
	—. SUTHER, Right Rev. Thomas George, D.C.L., Bishop of Aberdeen and Orkney; at San Remo	68
	24. VON FLOTOW, Friedrich, composer of "Martha" and other operas; at Wiesbaden	70
	27. MARTIN, Frederick, F.S.S., editor of the "Statesman's Year Book"; at Lady Margaret Road, N.W.	52
Feb.	3. TAYLOR, Col. Right Hon. Thomas Edward, Chancellor of Duchy of Lancaster, 1874-80; at Dublin	72
	7. WORDSWORTH, William, last surviving son of the poet; at Rydal, Westmoreland	72
	8. JUNG, Sir Salar, G.C.S.I., Prime Minister of the Nizam of Hyderabad; at Hyderabad	50
	13. WAGNER, Richard, operatic composer; at Venice	70
	21. EGERTON OF TATTON, Lord, a munificent Churchman	76
	23. CLOQUET, Jules, Baron, anatomist and surgeon; at Paris	94
Mar.	3. HAYNE, Rev. Leighton George, Mus. Doc., composer of church music;	47
	7. GREEN, Rev. John Richard, M.A., historian; at Mentone	45
	8. WHITE, Sir Thomas, Alderman, Lord Mayor of London in 1876; at Sloane Street	63
	11. GORTSCHAKOFF, Alexander Michaelowitsch, Prince, Diplomatist; at Baden Baden	84
	12. DILKE, Ashton Wentworth, late M.P. for Newcastle, Proprietor of the "Weekly Dispatch;" at Algiers	32
	14. HERRIES, Sir Charles J., K.C.B., Chairman of Board of Inland Revenue 1877-81; at Sevenoaks	67
	—. MAX, Karl, socialist; in London	65
	19. DOYLE, General Sir Hastings, K.C.M.G., Lieutenant-Governor of Nova Scotia, 1867–73; at Bolton Street	78
	21. JESSEL, Right Hon. Sir George, Master of the Rolls; at Hyde Park Gardens	59
	26. JENNINGS, Ven. John, M.A., Archdeacon and Canon of Westminster, and rector of St. John's for 51 years; at Dean's Yard, Westminster	84
	27. BROWN, John, the Queen's private attendant from 1865 to 1883; at Windsor Castle	56
	28. COLERIDGE, Rev. Derwent, Prebendary of St. Paul's, Principal of St. Mark's College, Chelsea, 1841–64, last surviving son of the poet; at Torquay	82
	—. DIEFENBACH, Lorenz, lexicographer; at Darmstadt	77
	29. VON MAJLATH, George, President of the Hungarian Upper House, Chief Judge of the Royal Court, and President of the highest Court of Appeal; (murdered) at Buda	65
April	8. VEUILLOT, Louis, editor of the "Univers"; at Paris	69
	13. O'KELLY, Joseph, M.A., M.R.I.A., geologist; at Dublin	50

		Age
April	14. FARR, William, M.D., F.R.S., late Superintendent of the Statistical Department of the Registrar-General's Office; at Portsdown Road, Maida Vale	75
	—. TALBOT DE MALAHIDE, Lord, President of the Archæological Institute; at Madeira	77
	15. FREDERICK FRANCIS II, Grand Duke of Mecklenburg-Schwerin, after reigning 41 years; at Schwerin	60
	16. SCOTT, H. Y. D., F.R.S., Major-General, Secretary to the Royal Commissioners of the Exhibition of 1851, and Architect of the Royal Albert Hall; at Sydenham	61
	17. ROSE, Sir Philip, Bart., for some years legal adviser of the Conservative Party; at Cromwell Road	67
	21. MACKARNESS, Right Rev. George Richard, D.D., Bishop of Argyll and of the Isles; at Brighton	60
	24. SANDEAU, Jules, author and dramatist, Conservateur of the Mazarin Library and Librarian of St. Cloud; at Paris	72
	25. LEITCH, William Leighton, artist, Vice-President of the Institute of Painters in Water Colours; at 124, Alexandra Road, St. John's Wood	78
	28. RUSSELL, Rev. John, well known as a sportsman; at Black Torrington	87
May	1. CONNOR, Very Rev. George Henry, M.A., Dean of Windsor, Domestic Chaplain to the Queen, and Registrar of the Order of the Garter; at Windsor	61
	6. DEASY, Right Hon. Richard, Lord Justice of Appeal in Ireland; at Dublin	70
	9. LEE, Ven. William, D.D., Archdeacon of Dublin; at Dublin	66
	15. DRUITT, Robert, M.D., author of the "Surgeon's Vade Mecum" and many other works; at Kensington	68
	18. COLERIDGE, Rev. Edward, Fellow of Eton, one of the founders of St. Augustine's College, Canterbury; at Mapledurham	83
	19. CLOWES, William, printer, for thirty years Treasurer of the Printers' Pension Corporation	76
	20. CHAMBERS, William, LL.D., publisher and editor, Lord Provost of Edinburgh, 1865–1868, offered a Baronetcy by the Queen a few days before his death; at Chester Street, Edinburgh	83
	23. SHAW, James, ex-Sheriff of London, known under the *nom de plume* of "the Silent Member" as the author of political sketches	47
	25. ABD-EL-KADER; at Damascus	75
	—. LABOULAYE, Edouard, legist, Member of Senate and Director of the College of France; at Paris	72
	28. ISBISTER, Alexander Kennedy, M.A., LL.B., Dean of the College of Preceptors; at Barnsbury	61
June	7. BOWYER, Sir George, Bart., for some years M.P. for Dundalk and Wexford; at King's Bench Walk, Temple	72
	18. IRONS, Rev. William Josiah, D.D., author and hymn writer; at 20, Gordon Square	70
	20. COLENSO, Right Rev. John W., D.D., Bishop of Natal; at Durban	68
	23. KNOLLYS, General the Right Hon. Sir William, K.C.B., Black Rod in the House of Lords, and Groom of the Stole to the Prince of Wales; at the Palace of Westminster	85
	26. SABINE, Sir Edward, R.A., K.C.B., President of Royal Society, 1851–71; at Richmond, Surrey	94

			Age
June	27.	SPOTTISWOODE, William, D.C.L., President of the Royal Society, 1878-83; at Grosvenor Place	58
	28.	TURLE, Henry F., editor of "Notes and Queries" 1878-83; at Westminster	47
July	4.	MARLBOROUGH, Duke of, Lord Lieutenant of Ireland, 1876–80; at Berkeley Square	61
	8.	ABBISS, Rev. John, for sixty-four years rector of St. Bartholomew-the-Great, London	93
	13.	RANAVOLANA II, Queen of Madagascar; at Antananarivo.	
	16.	EASTWICK, Edward Backhouse, C.B., F.R.S., Oriental Scholar, late M.P. for Falmouth; at Ventnor	70
	18.	THOMAS, Rev. John, D.C.L., Canon of Canterbury Cathedral, 1862-83, Rector of All Hallows, Barking, London, 1852-82; at Gordon Square	72
	19.	LEE, Rev. Alfred T., LL.D., Secretary of the Church Defence Institution and Preacher at Gray's Inn; at Ealing	54
	—	BIRKS, Rev. Thomas Lawson, M.A., Professor of Moral Theology; at Cambridge	72
	20.	TU DUC, King of Annam; at Hué	52
	24.	WEBB, Captain; drowned while attempting to swim the Niagara Falls	38
	26.	WILLIAMS, Sir William Fenwick, of Kars, Bart., K.C.B.; at Suffolk Street, Pall Mall	83
Aug.	9.	MOFFAT, Dr. Robert, missionary to Africa; at Leigh, near Tunbridge Wells	87
	24.	HENRI, COMTE DE CHAMBORD; at Frohsdorf	62
	25.	BROWN, Rawdon, editor of the Calendar of Venetian State Papers; at Venice	80
	31.	VARLEY, Cromwell Fleetwood, F.R.S., electrician	55
Sept.	3.	BOND, Henry John Hayles, M.D., late Regius Professor of Medicine; at Cambridge	82
	4.	MARWOOD, William, public executioner from 1871-83; at Horncastle	63
	—.	TURGUENIEFF, Ivan Sergueyevitch, author; at Paris.	
	9.	BIRLEY, Hugh, M.P. for Manchester; at Withington, Manchester	65
	10.	CONSCIENCE, Henri, novelist; at Brussels	71
	11.	COOK, Dutton, assistant editor of "Cornhill Magazine," 1868-71, and dramatic critic of the "Pall Mall Gazette," 1867-75; at Gloucester Crescent, Regent's Park	52
	12.	COLLINSON, Sir Richard, K.C.B., Admiral, Master of the Trinity House; at Ealing	72
	17.	COLLIER, John Payne, Shakesperian critic; at Maidenhead	94
	22.	STEBBING, Rev. Henry, D.D., F.R.S., author and journalist; at St. James's Parsonage, Hampstead Road	84
	24.	JASCHKE, Heinrich August, Moravian missionary, translator of the New Testament into Tibetan and author of dictionary of that language	66
	29.	BEGG, Rev. James, D.D., the chief opponent of the use of the organ and other innovations in the Scottish Free Church; at Edinburgh	74
Oct.	5.	SHORT, Right Rev. Augustus, D.D., late Bishop of Adelaide, New South Wales, 1847-83; at Eastbourne	80
	10.	MOUNT CASHELL, Earl of, oldest member of the House of Lords, having sat as a Representative Peer for Ireland since 1826	91

		Age
Oct.	6. BERESFORD, Right Hon. William, formerly M.P. for Harwich and for North Essex; at 40, Eccleston Square .	87
	15. SCHIRA, Francesco, composer and orchestral conductor .	68
	19. HARCOURT, Egerton Vernon, registrar of the diocese of York; at Whitwell Hall, Yorkshire.	80
	20. GASELEE, Stephen, Sergeant-at-law, formerly M.P. for Portsmouth; at Cambridge Square, Hyde Park . .	76
	24. TRELAWNY, Colonel Harry Reginald Salusbury, campanologist; at Poltain, Penzance	56
Nov.	1. SWABEY, M. C. Merttins, D.C.L., J.P., Bencher of Gray's Inn, Chancellor of the Dioceses of Oxford and Ripon; at Langley, Bucks	62
	2. LEEMAN, Joseph J. J., M.P. for York; at Acomb Priory, York	41

NOTE.—This table includes the names of 112 persons, of whom 31 were over 80 years of age, and of these 7 were over 90.

INDEX

TO

'THE BRITISH ALMANAC' & 'COMPANION TO THE ALMANAC.'

(The figures in parentheses refer to the pages of the 'British Almanac,' and those not so marked to the separately numbered pages of the 'Companion to the Almanac.')

PAGE

Abstracts of Acts of Parliament . 219–244
" Parliamentary and other Official Documents . 245–276
Agriculture, Statistics of 260
" Statute relating to . . 241–244
Ambassadors, foreign, in England . (92)
Architecture of the Year 131–146
Army and Navy, Statutes relating to 220–221
Army Agents . . . . . (71)
Army, General Officers of, British . . (69)
" " " Indian . (70)
Art Exhibitions of the Year . . 165–181
Bank of England, Directors of . . (80)
" " transfer days at . (13)
Banks and Bankers in London . . (81)
Bishops of Church of England . . (57)
" " Ireland . . . (57)
" " Scotland . . (57)
" " in Colonies . . (58)
Calendar for 1884 . . . . . (14–37)
Cambridge University . . . . . (59)
Channel Tunnel, The. By J. Dennis 74–86
Chronicle of Events and Occurrences, 1882–83 277–282
Church, Education, Professions, Statutes relating to 219–220
Circuits of the Judges . . . . . (77)
Colonial Governors . . . . . (93)
Commons, House of . . . . . (45)
Commerce and Navigation, Statistics of 254–257
Coroners in London and Vicinity . (72)
Corporation of London . . . . . (77)
Correspondence of Eras with 1884 . (3)
County Courts in England and Wales . . . . . (73)
Courts of Law . . . . . (73)
Crime, Pauperism, and Accidents, Statistics of 262–265
Currency, Statistics of 249
Dividend and Transfer Days at Bank (13)
Dublin University . . . . . (67)
Durham University . . . . . (61)
Dwellings of the Poor. By Charles Mackeson 117–130
Ecclesiastical Statutes 223–224
Eclipses in 1884 . . . . . (11)
Education, Science, and Art, Statistics of 266–269
Emigration, Statistics of 270–271
English Philanthropy in 1883 . . 206–209
Exhibitions in or near London . . (95)
Facts and Fancies of Longevity. By W. E. A. Axon, F.S.S. 39–50
Finance and Taxation, Statistics of 245–253
" Statute relating to 236–237
Handel Festivals. By C. Mackeson 107–117
High Water at the London Docks . (6)
" Out ports . . . (5)
Holidays at Public Offices . . . . (13)
House of Commons . . . . . (45)
" Peers . . . . . (40)
Illuminated Discs of Venus and Mars (11)
Importation of Food. By E. Freeth 101–107

PAGE

Inns of Court . . . . . (76)
Insurance Companies . . . . . (83)
International Fisheries Exhibition. By J. J. Manley, M.A. 23–38
Irish Bishops . . . . . (57)
Irish Lords Lieutenant . . . . . (53)
" Universities and Colleges . . (67)
Kew Observatory. By C. S. Murray 5–21
Law and Justice, Statutes relating to 225–236
" " Statistics relating to 262–265
Learned Societies and Institutions . (89)
Legislation of 1883 210–218
Licences and Taxes . . . . . (84)
Local Government, Statutes relating to 224–225
London Cab Fares . . . . . (94)
" Corporation of . . . . . (77)
" School Board (The) . . . . (72)
" University . . . . . (60)
" University College . . . . (61)
Lords Lieutenant . . . . . (52)
Migration of Birds. By W. E. A. Axon, F.S.S. 51–64
Ministry, The . . . . . (39)
Miscellaneous Statistics 275–276
" Statutes 237–244
Moonlight, Table of Duration of . . (10)
Music (The) of the Year 196–205
Navy, Flag Officers . . . . . (70)
" Agents . . . . . (71)
Necrological Table (1882–83) . . 283–287
Notes for the Year . . . . . (11)
Oxford University . . . . . (58)
Pauperism, Statistics of 262
Population, Statistics of 261
Post Office, The. Statistics of . . 272–275
" " Information relating to (87, 88)
Provincial Congresses of the Year. By W. Davenport Adams . . . 182–195
Privy Council, Members of . . . . (56)
Quarter Sessions in 1884. . . . . (12)
Royal Family, Members of . . . . (38)
" Households . . . . . (38)
Science of the Year, by J. F. Iselin, M.A., and C. A. Buckmaster, M.A. 146–165
Scotland, Established Church of . . (58)
" Episcopal " " . . (57)
" Lords Lieutenant and Sheriffs of . . . . . (52)
" Universities and Colleges . (66)
Smoke Abatement. By L. T. Thorne, Ph.D. 87–101
Sovereigns and Governors of Countries (52)
Sun, Table Rising and Setting of . . (2)
Taxes and Licences. . . . . (84)
Terms in 1884 . . . . . (13)
Thrift. By J. J. Manley, M.A. . 65–73
Trade and Agriculture, Statistics of 258–260
Trade and Commerce, Statutes relating to 221–224
Transfer days at Bank . . . . . (13)
Wales, University College of . . . (62)

BRITISH MUSEUM 5 DEC 83

THE GRESHAM LIFE ASSURANCE SOCIETY.

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BRIGHTON, 4, Pavilion Buildings.
BRISTOL, 1, Broad Quay.
HULL, Trinity House Lane.
LIVERPOOL, Gresham Buildings, 99, Dale Street.
MANCHESTER, 2, Cooper Street.
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Realised Assets (1882), **£3,174,755** Life Assurance and Annuity Funds, **£2,992,975**
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The Directors are prepared to receive from Local Boards and Corporations applications for Loans upon Rates.

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Prospectus, Reports, and Proposal Forms can be obtained on application to the Society's Agents and Branch Offices, or to—

JOSEPH ALLEN,
Secretary.

b

Atlas Assurance Company,

FIRE, LIFE, ACCIDENT,

92, CHEAPSIDE, LONDON.

Established 1808,

And Empowered by Act of Parliament of the 54th Geo. III. c. 79.

Capital, £1,200,000.

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(*For Qualification, see below*).

Attention is particularly requested to the following points respecting this Society, as being of special importance to Clergymen and their Lay relatives desiring to assure their lives:—

1. **SECURITY.**—The security offered by this Society for the due fulfilment of its engagements consists of Funds, amounting to nearly **£3,002,005,** created from Premiums accumulated at compound interest, together with an Annual Income derived from Premiums and interest on these funds of **£333,189.** The average rate of interest obtained on the Society's Funds during the financial year 1882-3 was **£4 3s. 2d.** per cent. The investments comprise Mortgages of Freehold Estates in England and Wales, of long Leaseholds in the cities of London and Westminster, of Rates under Acts of Parliament, and of Life Interests and Reversions; Railway, Gas, and Water-works Debenture Stocks; and Loans on the Society's Policies within the surrender values.

2. **BONUS.**—This Society, being purely **mutual,** has no **Proprietors,** and consequently no **Proprietors' Fund** upon which to pay interest. **All the Profits are the property of the Assured Members.** The total Profits **realized** and **divided** since the establishment of the Society amount to **£1,619,812,** of which **£437,347** was distributed at the last Quinquennial Bonus among **7,882** Policies. Of these **1,070** were then, by means of Bonus, not only altogether released from the payment of Annual Premiums, but had, in almost every case, additions made to the sums originally assured.

3. **PREMIUMS.**—The Rates of Premium for which assurances may be effected in this Society are less than those charged by the great majority of Life Assurance Offices. One-fifth of the Annual Premium may remain a charge upon the Policy, to be paid wholly or in part at each Quinquennial Division of Profits. Assurances upon life are granted for any amount not exceeding **£7,500.**

4. **MANAGEMENT.**—This Society **neither employs Agents nor allows Commission** for the introduction of new business. The expenses of management on all accounts were in the past financial year only **£3 15s.** per cent. of the Total Revenue, and less than **£5 16s.** per cent. of the Premium Revenue. So that for **£5 16s. out of every £100 received for Premiums,—which is very little more than the most moderate allowance paid by other Offices for Commission alone,—the whole business of this Society is conducted.**

NO LIABILITY INCURRED BY THE ASSURED.

The business of the Society is chiefly with a class of persons in which the average duration of life is allowed to be beyond that ordinarily found in the community at large. The experience of the duration of life among the Members has hitherto been very favourable.

STEWART HELDER, *Actuary.*
MATTHEW HODGSON, *Secretary.*

QUALIFICATION.

The following may make an Assurance upon his or her own Life, and also for his or her own benefit upon the Life of any other person, provided He or She may have an interest in such Life to the amount of the capital sum to be assured:—

1. Any Clergyman of the respective Churches of England and Ireland, or of the Protestant Episcopal Church in Scotland.
2. Any Wife, Widow, Child or Grandchild, or any Father, Mother, Brother, Sister, Uncle, Aunt, Nephew or Niece of any such Clergyman.
3. Any Father, Mother, Brother, Sister, Uncle, Aunt, Nephew or Niece of the Wife or Widow of any such Clergyman.
4. The Wife or Widow of any Son, or the Husband or Widower of any Daughter, of any such Clergyman.
5. Any Director, or other person holding any office in the Society.

Any person not thus qualified may make Assurances upon Life, if the persons upon whose lives such assurances are to be made are themselves qualified.

Applications for Assurances, &c., &c., may be made personally at the Office, 1 and 2, The Sanctuary, Westminster, or by letter addressed to the Secretary.

THE ECONOMIC
LIFE ASSURANCE SOCIETY,

No. 6, NEW BRIDGE STREET, BLACKFRIARS, LONDON, E.C.

ESTABLISHED 1823.

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The **lowest** rates of Premium on the **Mutual System**, for young and middle-aged lives, with early participation in Profits.

Number of Policies in Force	10,288
Sums Assured, with Bonus Additions	£9,348,472
Security—Accumulated Fund	£3,569,032
Annual Income	£394,177
Total Claims paid, with Bonus Additions	£6,877,751
Total Bonuses declared to 1878 inclusive	£3,507,415

Bonus.—The Society being on the **Mutual** principle, the Assured share the **whole of the Profits.** Policies effected before 31st December of each year receive a full year's Bonus for the year of entry.

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Assets	£3,512,661
Liabilities...	2,949,995
Surplus	£562,666

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JOHN RALPH GRIMES, *Secretary.*

EQUITABLE LIFE ASSURANCE SOCIETY.

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THE OLDEST LIFE OFFICE ON THE MUTUAL PRINCIPLE IN THE WORLD.

BONUS TABLE FOR 1884.

TABLE showing the total Amount payable under a Policy for **£1000** (including the additions), in the event of its becoming a claim after payment of the premium due in the year **1884**.

Date of Policy.	Sum payable including additions.	
	£	s.
From 25th Jan. 1817 to 24th April 1817	3775	0
,, 24th April 1817 to 16th April 1818	3675	0
,, 18th April 1818 to 4th Feb. 1819	3575	0
,, 5th Feb. 1819 to 3rd Jan. 1820	3475	0
,, 7th Jan. 1820 to 22nd Dec. 1820	3375	0
,, 23rd Dec. 1820 to 30th Nov. 1821	3275	0
,, 1st Dec. 1821 to 7th Mar. 1823	3175	0
,, 7th Mar. 1823 to 24th May 1824	3075	0
,, 25th May 1824 to 8th Mar. 1825	2975	0
,, 9th Mar. 1825 to 3rd Nov. 1826	2900	0
,, 7th Nov. 1826 to 15th July 1828	2825	0
,, 21st July 1828 to 1st Mar. 1830	2750	0
,, 3rd Mar. 1830 to 24th Nov. 1831	2675	0
,, 24th Nov. 1831 to 1st Aug. 1833	2600	0
,, 1st Aug. 1833 to 18th June 1835	2525	0
,, 19th June 1835 to 21st July 1837	2450	0
,, 21st July 1837 to 22nd Jan. 1839	2375	0
,, 24th Jan. 1839 to 10th Dec. 1840	2300	0
,, 15th Dec. 1840 to 2nd Nov. 1842	2225	0
,, 12th Nov. 1842 to 18th June 1845	2170	0
,, 19th June 1845 to 2nd Mar. 1847	2115	0
,, 3rd Mar. 1847 to 14th Nov. 1848	2060	0
,, 14th Nov. 1848 to 19th Nov. 1850	2005	0
,, 19th Nov. 1850 to 26th July 1853	1950	0
,, 26th July 1853 to 31st Dec. 1855	1895	0
,, 1st Jan. 1856 to 31st Dec. 1856	1840	0
,, 1st Jan. 1857 to 31st Dec. 1857	1785	0
,, 1st Jan. 1858 to 31st Dec. 1858	1730	0
,, 1st Jan. 1859 to 31st Dec. 1859	1675	0
,, 1st Jan. 1860 to 31st Dec. 1860	1637	10
,, 1st Jan. 1861 to 31st Dec. 1861	1600	0
,, 1st Jan. 1862 to 31st Dec. 1862	1562	10
,, 1st Jan. 1863 to 31st Dec. 1863	1525	0
,, 1st Jan. 1864 to 31st Dec. 1864	1487	10
,, 1st Jan. 1865 to 31st Dec. 1865	1450	0
,, 1st Jan. 1866 to 31st Dec. 1866	1412	10
,, 1st Jan. 1867 to 31st Dec. 1867	1375	0
,, 1st Jan. 1868 to 31st Dec. 1868	1337	10
,, 1st Jan. 1869 to 31st Dec. 1869	1300	0
,, 1st Jan. 1870 to 31st Dec. 1870	1280	0
,, 1st Jan. 1871 to 31st Dec. 1871	1260	0
,, 1st Jan. 1872 to 31st Dec. 1872	1240	0
,, 1st Jan. 1873 to 31st Dec. 1873	1220	0
,, 1st Jan. 1874 to 31st Dec. 1874	1200	0
,, 1st Jan. 1875 to 31st Dec. 1875	1160	0
,, 1st Jan. 1876 to 31st Dec. 1876	1120	0
,, 1st Jan. 1877 to 31st Dec. 1877	1080	0
,, 1st Jan. 1878 to 31st Dec. 1878	1040	0

THE EQUITABLE has never allowed Commission.

J. WARE STEPHENSON, *Actuary.*

GUARDIAN
Fire and Life Assurance Company.

Established 1821, *and Empowered by Special Acts of Parliament.*

Subscribed Capital	**£2,000,000**
Paid up Capital	**1,000,000**
Total Funds in hand	**3,833,000**
Total Income, over	**651,000**

Directors.

CHAIRMAN—JOHN G. TALBOT, ESQ., M.P.

DEPUTY-CHAIRMAN—ALBAN G. H. GIBBS, ESQ.

HENRY BONHAM-CARTER, ESQ.
CHARLES WILLIAM CURTIS, ESQ.
CHARLES F. DEVAS, ESQ.
SIR WALTER R. FARQUHAR, BART.
JAMES GOODSON, ESQ.
JOHN J. HAMILTON, ESQ.
THOMSON HANKEY, ESQ.
RICHARD MUSGRAVE HARVEY, ESQ.
RIGHT HON. JOHN G. HUBBARD, M.P.
GEORGE LAKE, ESQ.
RT. HON. G. J. SHAW LEFEVRE, M.P.
BEAUMONT W. LUBBOCK, ESQ.
JOHN BIDDULPH MARTIN, ESQ.
S. HOPE MORLEY, ESQ.
HENRY JOHN NORMAN, ESQ.
DAVID POWELL, ESQ.
AUGUSTUS PREVOST, ESQ.
HENRY VIGNE, ESQ.

Auditors.— CORNELIUS PAINE, ESQ. / NOEL WHITING, ESQ.

Physicians.—J. RUSSELL REYNOLDS, Esq., M.D., F.R.S., 38, Grosvenor Street, W.; and W. R. GOWERS, Esq., M.D., 50, Queen Anne Street, W.

Solicitors.—MESSRS. PARKIN, PAGDEN, & WOODHOUSE, 5, New Square, Lincoln's Inn.

Surveyors.— JOSEPH JENNINGS, Esq., Langham Street, Cavendish Square; / MESSRS. DRIVERS & Co. (Valuers for Landed Securities), 4, Whitehall.

Head Office:—11, LOMBARD STREET, LONDON, E.C.

Manager of the Fire Department.—F. J. MARSDEN.

Actuary and Secretary.—T. G. C. BROWNE.

Bankers.—MESSRS. MARTIN & Co., 68, Lombard Street.

Law Courts Branch:—21, FLEET STREET.

Branch Manager.—RALPH P. HARDY. | *Bankers.*—MESSRS. CHILD & Co., 1, Fleet St.

LIFE DEPARTMENT.

The Last Quinquennial Valuation was made on the basis of the Institute of Actuaries' (H^M) Table of Mortality and 3 per cent. interest. The Valuation was strictly a net premium one, the whole of the loading being reserved.

FEATURES OF LIFE POLICIES.

Payment of Claims is generally made immediately after proof of death and title.

A *Guardian* Policy of five years' standing can be revived within thirteen months on payment of the premiums overdue and a fine, no evidence of health being required.

A *Guardian* Policy of five years' standing is free from all restrictions as to foreign residence and travel, provided the life assured has attained the age of 30, and has not previously exceeded the free limits, nor is in the military, naval, nor mercantile marine services.

Forfeiture of a *Guardian* Policy on account of Suicide is limited to thirteen months.

A *Guardian* Policy is indisputable on the ground of any *bona fide* error in the proposal after the age has been admitted.

The *Guardian* issues, when required, special forms of Trust Policies for wife and children.

The *Guardian* system of Paid-up and Non-Forfeiture Policies gives ample protection to Policy-holders who from any cause cannot continue their periodical payment.

Life Fund (1882) - - £2,175,000 | Life Income - - - £279,000

FIRE DEPARTMENT.

Insurances effected on Property at Home and Abroad at Moderate Rates.

Fire Fund (1882) - - £410,000 | Fire Income - - - £327,000

HAND-IN-HAND

FIRE AND LIFE INSURANCE SOCIETY,

26, NEW BRIDGE STREET, BLACKFRIARS, LONDON, E.C.

Instituted in 1696.—*Extended to Life Insurance*, 1836.

DIRECTORS.

The Hon. LIONEL ASHLEY.
T. PALMER CHAPMAN, Esq.
MAJOR H. F. C. CUST.
JOHN LETTSOM ELLIOT, Esq.
Vice-Admiral Sir LEOPOLD G. HEATH, K.C.B.
CHAS. R. GURNEY HOARE, Esq.
ANDREW JOHNSTON, Esq.
FREDERICK LOCKER, Esq.
T. FULLER MAITLAND, Esq.
ARTHUR SPERLING, Esq.
JAMES SYDNEY STOPFORD, Esq.
W. ESDAILE WINTER, Esq.

AUDITORS.

J. LETTSOM ELLIOT, Esq.

The Rev. T. A. FULLER MAITLAND. | The Right Hon. Lord THURLOW.

Bankers—Messrs. GOSLINGS & SHARPE, 19, Fleet Street.

Physician—THOMAS K. CHAMBERS, M.D.

Solicitors—Messrs. NICHOLL, MANISTY, & CO., 1, Howard Street, Strand.

Secretary—BENJAMIN BLENKINSOP, Esq.

Actuary—JAMES TERRY, Esq.

The **oldest Insurance Office** in the World.

The **only Mutual Office** in the Kingdom for both **Fire and Life.**

There being **no Shareholders, all Profits** are **divided yearly amongst the Insured.**

BONUS RETURNS.

LIFE—1st Series	70	per Cent. per Annum.
2nd Series (according to the age of the Policy) ...	60 to 70	
3rd Series	45 rising to 55	
FIRE—Annual Policies of Two Years' standing, with certain exceptions	25	

No Policy Holder is subject to **any Personal Liability.**

The Directors are **willing to appoint as Agents persons of good position and character.**

VALUATION BALANCE SHEET, 31*st DECEMBER*, 1882.

ASSETS.

General Accumulated Fund, Fire and Life	£1,670,130
Life Assurance Fund, under Act of 1870	383,443
Present Value of Life Premiums	1,656,766
	£3,710,339

LIABILITIES.

Present Value of Insurances and Annuities, LIFE ...	£2,295,954
Sum Reserved for future Abatements on Premiums, LIFE	961,198
Sum Reserved for Bonus Returns on unexpired Policies, FIRE	21,382
Premiums in hand on account of unexpired terms of Insurance, FIRE	37,502
Balance of Assets unappropriated	394,303
	£3,710,339

The ACCOUNTS and STATEMENTS as deposited with the Board of Trade, as well as Prospectuses and Forms of Proposal, may be had of any of the Society's Agents, or on application at the Head Office.

BENJAMIN BLENKINSOP, *Secretary.*

THE LONDON ASSURANCE.

Incorporated by Royal Charter, A.D. 1720.

FOR FIRE, LIFE, AND MARINE ASSURANCES.

No. 7, ROYAL EXCHANGE, LONDON, E.C.

Branch Offices
- No. 55, PARLIAMENT STREET, LONDON, S.W.
- „ 16, CROSS STREET, MANCHESTER.
- „ 28, EXCHANGE STREET EAST, LIVERPOOL.
- „ 104, WEST GEORGE STREET, GLASGOW.

WILLIAM RENNIE, Esq., *Governor.*

LEWIS ALEXANDER WALLACE, Esq., *Sub-Governor.*
GEORGE WILLIAM CAMPBELL, Esq., *Deputy-Governor.*

DIRECTORS.

H. GOUGH ARBUTHNOT, Esq.	HOWARD GILLIAT, Esq.	CHARLES LYALL, Esq.
ROBERT BURN BLYTH, Esq.	HENRY GOSCHEN, Esq.	GREVILLE H. PALMER, Esq.
WILLIAM T. BRAND, Esq.	EDWIN GOWER, Esq.	Capt. R. W. PELLY, R.N.
EDWARD BUDD, Esq.	A. C. GUTHRIE, Esq.	ROBERT RYRIE, Esq.
MARK WILKS COLLET, Esq.	PERCIVAL L. HAMBRO, Esq.	ALBERT G. SANDEMAN, Esq.
GEORGE B DEWHURST, Esq.	ROBERT HENDERSON, Esq.	DAVID P. SELLAR, Esq.
HENRY LLOYD GIBBS, Esq.	LOUIS HUTH, Esq.	Col. LEOPOLD SEYMOUR.
ROBERT GILLESPIE, Esq.	HENRY J. B. KENDALL, Esq.	JOHN YOUNG, Esq.

West End Committee.

S. P. LOW, Esq. (Messrs. Grindlay & Co.)
CHARLES S. PARIS, Esq., 22, King Street, St. James's, S.W.
The Hon. FRANCIS PARKER, 3, Temple Gardens, E.C.

Secretary.
JOHN P. LAURENCE, Esq.

Underwriter.
JOHN STEWART MACKINTOSH, Esq.

Actuary.
ARTHUR H. BAILEY, Esq.

Manager of the Fire Department.
JAMES CLUNES, Esq.

Medical Officers.

EDWARD CLAPTON, M.D., 10A, St. Thomas's Street, Southwark.
JOHN HARLEY, M.D., 39, Brook Street, Grosvenor Square.

The Corporation has granted Fire, Life, and Marine Assurances for more than a Century and a half; during that long period it has endeavoured to introduce into its practice all the real improvements that have from time to time been suggested, and to afford every facility for the transaction of business.

Of the Share Capital the sum of £448,275 has been paid up. Funds in hand exceed £3,200,000.

Claims under Life Policies are payable upon proof of death and title being furnished to the satisfaction of the Court of Directors, without as hitherto deferring the settlement for a period of three months.

Copies of the Accounts pursuant to "The Life Assurance Companies Act, 1870," can be had on application personally or by letter.

NORTH BRITISH AND MERCANTILE INSURANCE COMPANY.

Incorporated by Royal Charter and Special Acts of Parliament.

CHIEF OFFICES:

London: 61, Threadneedle St.; West End Office: 8, Waterloo Place, Pall Mall; Edinburgh: 64, Princes St.

DIRECTORS IN LONDON.

Chairman, John White Cater, Esq. — *Deputy-Chairman*, Chas. Morrison, Esq.

Richard Baring, Esq.
Richard Brandt, Esq.
Alexander H. Campbell, Esq.
Edward Cohen, Esq.
David Davidson, Esq.
P. du Pré Grenfell, Esq.
Quintin Hogg, Esq.
Charles W. Mills, Esq.
Junius Morgan, Esq.
George Garden Nicol, Esq.
John Sanderson, Esq.
Baron John H. W. Schroder.
George Young, Esq.

MANAGER OF FIRE DEPARTMENT.
G. H. Burnett.

MANAGER OF LIFE DEPARTMENT.
Henry Cockburn.

FOREIGN SUB-MANAGER.—Philip Winsor.

SECRETARY.—F. W. Lance.

MEDICAL OFFICERS.
A. H. Hassall, M.D.; R. C. Cream, M.D.; Hermann Weber, M.D.

SOLICITOR.—Sir W. R. Drake.

Resources of the Company as at 31st December, 1882:—

FIRE DEPARTMENT.

	£	s.	d.
The Net Premiums received during the year 1882, after deducting Re-insurances, amounted to	1,086,566	14	8
The Net Losses by Fire during the year were, after deducting Re-insurances	677,562	14	6
This embraces not merely all losses actually ascertained and paid, but a full estimate of all claims that had arisen prior to 31st December.			
The Fire Funds, after payment of the Dividend and Bonus after-mentioned, and irrespective of the Paid-up Capital, are as follows:—			
Reserve	£844,576	19	11
Premium Reserve...	362,188	18	3
Balance of Profit and Loss Account ...	67,895	12	6
	£1,274,661	10	8

LIFE DEPARTMENT.

	£	s.	d.
961 New Policies were issued during the year, assuring	912,590	0	0
The New Premiums on which amount to the sum of	32,877	4	9
The Claims sustained during the year, including 19 Endowments, were 286 in number, arising under 334 Policies, and the sums payable, after deducting Re-assurances, amounted, with Bonus additions, to	233,195	0	10
The Income for the year of the Life Branch from Premiums and Interest amounted to...	469,075	5	5
In the Annuity Branch 115 Bonds were granted, securing Annuities to the amount of £11,963 0s. 7d. yearly, for which was received the sum of	108,992	2	4
During the year 47 Annuities have fallen in, relieving the Company of the sum of £2,270 10s. 3d. yearly.			
The Life Fund, which was increased during the year by £162,245 11s. 5d., was	3,274,835	19	1
The Annuity Fund amounted to	473,147	3	2

Prospectuses and every information can be obtained at the CHIEF OFFICES.

PROVIDENT LIFE OFFICE.

FOUNDED 1806.

50, REGENT STREET, LONDON, W., AND 14, CORNHILL, E.C.

EXISTING ASSURANCES exceed..	**£7,000,000**
INVESTED FUNDS	**£2,300,000**
ANNUAL INCOME	**£300,973**
CLAIMS PAID exceed..	**£6,800,000**
BONUSES DECLARED	**£2,591,000**

HALF-CREDIT SYSTEM,

Applicable only to With-Bonus Policies for the Whole Term of Life (TABLE A *in Prospectus*) *and to Lives not exceeding* 60 *years of age.*

UNDER this system, one-half the Premium only is payable during the first 5, 7, or 10 years, in the option of the Assured; the other half-premium remains a charge against the Policy, bearing 5 per cent. interest, payable in advance.

The arrears of half-premium may be paid off at any time, or be deducted from the sum assured when the claim arises, or from the Office Value in case of surrender.

This system offers the advantage of a low Premium during the early years of life.

The Large Bonuses declared by this Office may reasonably be expected (except upon Policies of a very recent date) to clear off any charge which may be due for these arrears of Premium.

Prospectuses and further Information to be obtained at the Head Office, or of any of the Agents.

CHARLES STEVENS, *Secretary.*

British Empire Mutual Life Assurance Company,

NEW BRIDGE STREET, LONDON, E.C.

Incorporated in the year 1847, *under Act* 7 *and* 8 *Vict. cap.* 110, *and further empowered by Special Act,* 15 *Vict. cap.* 53.

DIRECTORS.

JOHN RÜNTZ, Esq., *Chairman.* AUGUSTUS BENHAM, Esq., *Deputy Chairman.*

H. M. BOMPAS, Esq., Q.C.
HUGH CAMPBELL, M.D.
ROBERT FREEMAN, Esq.
WILLIAM GROSER, Esq.
PEARSON HILL, Esq.
DONALD MUNRO, Esq.
GEORGE PHILLIPS, Esq.
GEORGE ROOKE, Esq.
JOHN E. TRESIDDER, Esq.
J. H. TROUNCER, M.D. Lond.

Auditors—W. AUGUSTINE SPAIN, Esq., & HENRY CATTLEY STEWART, Esq.
Solicitors—Messrs. WATSON, SONS, & ROOM.
Surveyor—SAMUEL WALKER, Esq. *Actuary*—J. MARTIN, F.I.A., F.S.S.
Physician—E. H. GREENHOW, M.D., F.R.S. *Surgeon*—JOHN MANN, Esq.
Secretary—EDWIN BOWLEY, F.I.A., F.S.S.

This Company being established on the **Mutual Principle,** all profits belong to the Members. Every third year a careful Valuation of the Business is made, and large Bonuses have been declared. The Average Cash Bonus (Triennially exceeds 20 per cent. on the Premiums paid.

It has an ANNUAL INCOME exceeding **One Hundred and Fifty Thousand Pounds,**

An ACCUMULATED FUND, arising solely from premiums, of nearly **One Million Sterling.**

And has paid in CLAIMS upwards of **One Million Sterling.**

Loans on Freeholds, Leaseholds, and other Securities considered.

Prospectuses, Copies of the last Report and Balance Sheet, and Board of Trade Returns, etc., can be obtained on application to any of the Agents of the Company, or to EDWIN BOWLEY, *Secretary.*

GOVERNESSES' BENEVOLENT INSTITUTION.

INCORPORATED BY ROYAL CHARTER,

WITH POWER TO HOLD LAND BY GIFT OR PURCHASE.

BOARD OF MANAGEMENT.

THE REV. ALFRED J. BUSS, B.A.
ARTHUR RISDON CAPEL, Esq.
CECIL CHAPPELL, Esq.
GEORGE COCKLE, Esq.
THE REV. PREBENDARY CURREY, D.D.
THE LORD DUNSANY.
W. TIMBRELL ELLIOTT, Esq.
GEORGE B. GREGORY, Esq., M.P.
FREDERIC WILLIAM HAIGH, Esq.
JOHN WILLIAM HALE, Esq.
SIR FREDERICK J. HALLIDAY, K.C.B.
EDWARD B. HARTOPP, Esq.
THE LORD KINNAIRD.
THE REV. PREBENDARY MACKENZIE, M.A.
SIR ROBERT MONTGOMERY, K.C.B.
JOHN JEFFRYES OAKLEY, Esq.
R. RUTHVEN PYM, Esq.
EDWARD THORNTON, Esq.
T. PARRY WOODCOCK, Esq.

Honorary Secretary—MRS. DAVID LAING.
Secretary—CHARLES WILLIAM KLUGH, Esq., 32, Sackville Street, W.

The objects of this Society are—

Temporary Assistance to Governesses in distress, afforded privately and delicately, through the Ladies' Committee.

Annuity Fund. Elective Annuities to Aged Governesses, secured on invested capital, and thus independent of the prosperity of the Institution.

Provident Fund. Provident Annuities purchased by Ladies in any way connected with Education, upon Government Security, agreeably to the Act of Parliament. This branch includes a Savings Bank.

A Home for Governesses during the intervals between their engagements.

A System of Registration, entirely free of expense.

An Asylum for the Aged.

Membership consists in the payment of an annual Guinea, or of Ten Guineas in one sum. Subscribers are entitled to vote for Annuities in the proportion of one Vote for each Annual Half-Guinea not in arrear, and for each Donation of Five Guineas. Subscriptions are due on the 1st of January, and can always be remitted by Post-Office Order, or by a Cheque crossed 'Sir S. Scott & Co.'

NATIONAL
LIFE ASSURANCE SOCIETY,

FOR MUTUAL ASSURANCE.

2, KING WILLIAM STREET, LONDON, E.C.

Established 1830.

Moderate Premiums. **Large Profits.** **Undoubted Security.**

MILITARY and NAVAL OFFICERS assured at special Fixed Rates, covering all Risk of Service at Home and Abroad.

CLAIMS PAID 30 DAYS AFTER ADMISSION.

ASSURANCE FUND . . .	**£850,000**
ANNUAL INCOME	**£120,000**
CLAIMS PAID	**£1,740,000**
AMOUNT ASSURED . .	**£2,500,000**

Further information may be obtained on application to
HENRY JOHN PUCKLE, *Secretary.*

PRUDENTIAL ASSURANCE COMPANY, LIMITED,

HOLBORN BARS,

LONDON, E.C.

EVERY DESCRIPTION OF LIFE ASSURANCE AND ANNUITY BUSINESS TRANSACTED.

REVERSIONS PURCHASED.

The amount of Claims paid exceeds Five Millions.

The invested Assets exceed Three and a half Millions.

Whole-world Licenses granted to Seamen and others permanently engaged on board ship, at an extra premium of £1 per cent.

Limited Licenses for voyages not exceeding beyond 33 degrees north latitude, 10*s*. per cent.

THE LAST ANNUAL AND VALUATION REPORTS can be obtained upon application to the Secretary.

ROCK LIFE ASSURANCE COMPANY.

ESTABLISHED A.D. 1806.

No. 15, NEW BRIDGE ST., BLACKFRIARS, LONDON.

DIRECTORS.

Major-Gen. the Right Hon. LORD ABINGER, C.B.
WILFRID ARTHUR BEVAN, Esq.
GEORGE PARKER BIDDER, Esq., Q.C.
FREDERICK COX, Esq.
The Right Hon. JOHN GEORGE DODSON, M.P.
GEORGE ARTHUR FULLER, Esq.
JOHN GODDARD, Esq.
Sir JOHN KELK, Bart.
SYDNEY LAURENCE, Esq.
Lieut.-Gen. SIR GEORGE ST. PATRICK LAWRENCE, K.C.S.I., C.B.
CHARLES THOMAS LUCAS, Esq.
CHARLES RIVAZ, Esq.
CHARLES RUGGE-PRICE, Esq.
The Hon. CHARLES HEDLEY STRUTT, M.P.
WILLIAM BECKWITH TOWSE, Esq.
SAMUEL HARVEY TWINING, Esq.

Auditors.—WILLIAM COSSART, Esq.; FRANCIS KEARSEY, Esq.: GEORGE JAMES NEWBERY, Esq.; JAMES NAIRNE SCOTT, Esq.
Medical Officers—FRED. JOHN FARRE, M.D., F.R.C.P.; F. DE H. HALL, M.D., F.R.C.P., M.R.C.S.
Solicitor.—JOHN KENDALL, Esq., Union Bank Chambers, Lincoln's Inn.
Bankers.—Messrs. BARCLAY, BEVAN, TRITTON, & Co.
Actuary.—HENRY WILLIAM PORTER, Esq.

The **ROCK LIFE ASSURANCE COMPANY,** which has been established **Three Quarters of a Century,** has an **Accumulated Fund** of more than **Three Millions Sterling,** invested in Mortgages on Land, and other first-class Securities:—

	£	s.	d.
Viz., on the 19th August, 1882	3,237,473	7	4
Sum Assured—Inclusive of Bonus Additions—at that date	4,561,308	11	11
Estimated Liability thereon (Northampton Table of Mortality, 3 per Cent. Interest).	1,495,587	17	6
Being less than one-half the Fund invested.			
Total Amount of Bonus Additions made to Policies	3,646,588	16	11
Amount of Profits divided for the Seven Years ending 19th August, 1882	592,076	9	9
Annual Income	273,857	17	3
Total Claims paid—Inclusive of Bonus Additions	9,021,234	18	0

*** Copies of the Accounts deposited with the Board of Trade, pursuant to "The Life Assurance Companies Act, 1870," as well as of the Periodical Valuation Accounts, and every information may be obtained on application. H. W. PORTER, *Actuary.*

ROYAL EXCHANGE ASSURANCE CORPORATION.

(Established by Royal Charter, A.D. 1720.)

FOR SEA, FIRE, LIFE, AND ANNUITIES.

Chief Office, Royal Exchange, London; Branch, 29, Pall Mall.

The Accumulated Funds exceed £4,000,000. The Total Claims paid by this Corporation have exceeded THIRTY-TWO MILLIONS Sterling.

JAMES STEWART HODGSON, Esq., *Governor.* FRANCIS ALEXANDER HAMILTON, Esq., *Sub-Governor.* FREDERICK JOSEPH EDLMANN, Esq., *Deputy-Governor.*

Directors.

ROBERT BARCLAY, Esq.
JOHN GARRATT CATTLEY, Esq.
MARK CURRIE CLOSE, Esq.
EDWARD JAMES DANIELL, Esq.
WILLIAM DAVIDSON, Esq.
ALFRED DENT, Esq.
ALEXANDER DRUCE, Esq.
CHARLES HERMANN GÖSCHEN, Esq.
CHARLES ERNEST GREEN, Esq.
CHARLES SEYMOUR GRENFELL, Esq.
WILMOT HOLLAND, Esq.
EGERTON HUBBARD, Esq.
WILLIAM KNOWLES, Esq.
NEVILE LUBBOCK, Esq.
GEORGE FORBES MALCOLMSON, Esq.
DANIEL MEINERTZHAGEN, Esq.
Hon. RONALD LESLIE MELVILLE.
WILLIAM ROBERT MOBERLY, Esq.
WILLIAM GAIR RATHBONE, Esq.
Sir JOHN ROSE, Bart.
SAMUEL LEO SCHUSTER, Esq.
ERIC CARRINGTON SMITH, Esq.
HENRY FREDERIC TIARKS, Esq.
MONTAGU C. WILKINSON, Esq.

FIRE ASSURANCES on liberal terms.
LIFE ASSURANCES with or without participation in profits.
LOANS are granted on security of LIFE INTERESTS in connection with Policies of Assurance.
The Divisions of Profit take place *every Five years.*
At the last Division of Profits, the Reversionary Bonuses ranged from £1 8s. to over £6 per cent. per annum on the original sum assured, according to the age of the Policy and of the Life Assured.
The Company have on their books Policies, the Reversionary Bonuses on which average within a trifle of £3 per cent. per annum on the original sum assured.
A large participation in profits, with exemption, under Royal Charter, from the liabilities of partnership;—the guarantee of the invested Capital-Stock, and all the real improvements in modern practice, with the security of an Office whose resources have been tested by the experience of MORE THAN A CENTURY AND A HALF.
Applications for Agencies are invited. A Prospectus, Table of Bonus, and Balance Sheet will be forwarded on application. E. R. HANDCOCK, *Secretary.*

BRAND & Co's SPECIALTIES FOR INVALIDS

Estᵈ 1835

ESSENCES of BEEF, MUTTON, VEAL & CHICKEN, BEEF TEA, TURTLE SOUP & JELLY, MEAT LOZENGES &c.

SOLE ADDRESS No. LITTLE 11, STANHOPE ST. MAYFAIR, W.

OLDRIDGE'S BALM OF COLUMBIA

(*Established* 60 *years*)

Is the best and only certain remedy ever discovered for Preserving, Strengthening, Beautifying, or Restoring the HAIR, WHISKERS, or MOUSTACHES, and preventing them turning grey. Price 3*s*. 6*d*., 6*s*., and 11*s*. per bottle.

C. & A. OLDRIDGE,

22, Wellington Street, Strand, London, W.C.

AND ALL CHEMISTS AND PERFUMERS.

For Children it is invaluable, as it forms the basis of a magnificent head of hair, and prevents baldness in mature age.

THE ARMY SCRIPTURE READERS AND SOLDIERS' FRIEND SOCIETY,

4, *Trafalgar Square, Charing Cross, London, W.C.*

Patrons.

His Grace the ARCHBISHOP OF CANTERBURY;
Right Rev. Bishop CLAUGHTON, Chaplain-General;
Right Hon. EARL OF SHAFTESBURY.
President—General Sir A. J. LAWRENCE, K.C.B.
Treasurer—V. G. M. HOLT, Esq., 17, Whitehall Place.

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